ERCOT Nodal

Charge Type Matrix

Version 7.8

# Day-Ahead Market Statement Charge Types

| **Charge Type** | **Effective Dates** | **Protocol Formula** | **Protocol Sec.** | **Bill Determinants** |
| --- | --- | --- | --- | --- |
| Day-Ahead Energy Payment  (DAESAMT) | Effective  12-01-2010  to  Present | DAESAMT *q,**p*  = (-1) \* DASPP *p* \* DAES *q,**p*  **DAESAMTQSETOT*q* =DAESAMT *q, p***  DAESAMTTOT =DAESAMTQSETOT\_<Q> | 4.6.2.1  7.9.3.1 | Input:  DAES  DASPP  Output:  DAESAMT  DAESAMTQSETOT  DAESAMTTOT |
| Day-Ahead Energy Charge (DAEPAMT) | Effective  12-01-2010  to  Present | DAEPAMT *q, p* = DASPP *p* \* DAEP *q, p*  DAEPAMTQSETOT *q* =DAEPAMT *q, p*  DAEPAMTTOT = DAEPAMTQSETOT\_<Q> | 4.6.2.2  7.9.3.1 | Input:  DAEP  DASPP  Output:  DAEPAMT  DAEPAMTQSETOT  DAEPAMTTOT |
| Day-Ahead Make-Whole Payment (DAMWAMT) | Effective  06-10-2023  to  Present | DAMWAMT q,r,p = [(-1) \* Max (0, DAMGCOST q,r,p + DAEREV q,r,p +  DAASREV *q, r*) \* DAESR q,r,p,*h* / ( DAESR q,r,p)] + ADJDAMW q,r,p  For DAM-committed Resources (Generator, SGR, AGR or Configuration **without** Startup Transition Costs):  DAMGCOST q,r,p= (DAMSUFLAGq,r,p \* DASUPR q,r,p,st) + (( DAMWENEFLAGq,r,p \* (DAMEPR q,r,p,*h* \* DALSLq,r,p)) + ( DAMWENEFLAGq,r,p \* (DAAIEC q,r,p \* (DAESR q,r,p – DALSL q,r,p)))  For a DAM-committed Configuration **with** Startup Transition Costs:  DAMGCOST q,r,p **=** DAMTFLAGq,r,p \* (Max (0, (DASUPR q, after configuration,p,st - DASUPR q, before configuration,p,st))) **+**  ( DAMWENEFLAGq,r,p \* (DAMEPR q,r,p **\*** DALSL q,r,p)) **+** ( DAMWENEFLAGq,r,p \* (DAAIEC q,r,p**\*** (DAESR q,r,p **-** DALSL q,r,p)))  Where, If a non-null DAMEO exists for the hour:  DAMEPR q,r,p = Min(DAMEO q,r,p DAMECAP q,r,p )  Else,  DAMEPR q,r,p =  0  If approved Verifiable Costs present for the Resource:  DAVERIME q,r,p= [VFCLSL \* ((GASPERME \* FIP ) + (OILPERME \* FOP) + (SFPERME \* SFP)) + VOMLSL  Then  DAMECAP q,r,p= DAVERIME q,r,p  Else  DAMECAP q,r,p = Resource Category Minimum-Energy Generic Cap  Where, If a non-null DASUO exists for the hour:  DASUPR q,r,p,st = Min(DASUO q,r,p,st, DASUCAP q,r,p,st)  Else,  DASUPR q,r,p,st =  0  If approved Verifiable Costs present for the Resource (non-AGR):  DAVERISUq,r,p,st = [DAFCRS \* ((GASPERSU \* FIP ) + (OILPERSU \* FOP) + (SFPERSU \* SFP)) + VOMS  Then  DASUCAP q,r,p,st = DAVERISU q,r,p,st  Else  DASUCAP q,r,p,st = Resource Category Startup Offer Generic Cap  If Resource is an AGR, then:  DASUCAP q,r,p,st = Maxc (DAAGRRATIO q,r,p ) \* DAVERISUq,r,p,st  DAAGRRATIO q,r,p = AGRMAXON q,r,p / AGRTOT q,r,p  Where *c* represents the hours in a contiguous block of DAM-committed hours within the Operating Day.  And where:  DAEREV *q,r,p*= (-1) \* DASPP *p* \* DAESR *q,r,p*  DAASREV *q, r* = ((-1) \* MCPCRU*DAM* \* PCRURq,r,DAM) + ((-1) \* MCPCRD*DAM* \* PCRDRq,r,DAM) + ((-1) \* MCPCRR*DAM* \* PCRRR q,r,DAM) + ((-1) \* MCPCNS*DAM* \* PCNSR q,r,DAM) + ((-1) \* MCPCECR*DAM* \* PCECRR q,r,DAM)  DAMWAMTQSETOT *q* =DAMWAMT *q, p, r*  DAMWAMTTOT=DAMWAMTQSETOT *q*  ADJDAMW is a business-required adjustment cut, beyond what is in the protocol. | 4.6.2.3 | Input:  DAMCOMMITFLAG  DAMSUFLAG  DAMTFLAG  DAMWENEFLAG  DAESR  DASUO  DASTARTTYPE  DAMEO  DALSL  DAAIEC  DASPP  PCRUR  MCPCRU  PCRDR  MCPCRD  PCRRR  MCPCRR  PCNSR  MCPCNS  PCECRR  MCPCECR  AGRMAXON  AGRTOT  DAFCRS  GASPERSU  OILPERSU  SFPERSU  VOMS  VFCLSL  GASPERME  OILPERME  SFPERME  VOMLSL  FIP  FOP  SFP  ADJDAMW  Intermediate:  DAASREV  DAEREV  DAAGRRATIO  DAVERISU  DASUCAP  DASUPR  DAVERIME  DAMECAP  DAMEPR  DAMGCOST  Output:  DAMWAMT  DAMWAMTQSETOT  DAMWAMTTOT |
| Day-Ahead Make-Whole Charge (LADAMWAMT) | Effective  10-12-2016  to  Present | LADAMWAMT *q* = (-1) \* DAMWAMTTOT \* DAERS *q*  Where:  Day-Ahead Energy Purchase Ratio Share per QSE:  DAERS *q* = DAE *q* / DAETOT  DAETOT =DAE *q*  DAE *q* =DAEP *q, p* + RTOBL *q, (j, k)*  The calculation for DAMWAMTTOT is described in the DAMWAMT section. | 4.6.2.3 | Input:  DAMWAMTTOT  DAEP  RTOBL  Intermediate:  DAE  DAETOT  DAERS  Output:  LADAMWAMT |
| Day-Ahead Real-Time Obligation Amount  (DARTOBLAMT) | Effective  12-01-2010  to  Present | DARTOBLAMT *q, (j, k)* = DAOBLPR *(j, k)* \* RTOBL *q, (j, k)*  Where:  DAOBLPR *(j, k)* = DASPP *k* – DASPP *j*  DARTOBLAMTQSETOT *q* = DARTOBLAMT *q*, *(j, k)*  DARTOBLAMTTOT = DARTOBLAMTQSETOT *q* | 4.6.3  7.9.3.1 | Input:  DASPP  RTOBL  Intermediate:  DAOBLPR  Output:  DARTOBLAMT  DARTOBLAMTQSETOT  DARTOBLAMTTOT |
| Day-Ahead Real-Time Obligation with Links to an Option Amount (DARTOBLLOAMT) | Effective  02-14-2013  to  Present | DARTOBLLOAMT (*q, j, k)* = Max (0, DAOBLPR (j*, k)*) \* RTOBLLO (*q, j, k)*  Where:  DAOBLPR *(j, k)* = DASPP *k* – DASPP *j*  RTOBLLO *(q, j, k)* = OBLLOCRR *(q, j, k, crrid, crrofferid)*  DARTOBLLOAMTQSETOT *q* = DARTOBLLOAMT *(q, j, k)*  DARTOBLLOAMTTOT = DARTOBLLOAMTQSETOT *q* | 4.6.3  7.9.3.1 | Input:  DASPP  OBLLOCRR  Intermediate:  DAOBLPR  RTOBLLO  Output:  DARTOBLLOAMT  DARTOBLLOAMTQSETOT  DARTOBLLOAMTTOT |
| Day-Ahead Procured Capacity for Ancillary Service Amount  (PCRUAMT)  (PCRDAMT)  (PCRRAMT)  (PCNSAMT)  (PCECRAMT) | Effective  06-10-2023  to  Present | Where ‘XX’ is a placeholder for the following AS types (RU, RD, RR, NS, or ECR):  PCXXAMT *q* = (-1) \* MCPCXX *DAM* \* PCXX *q*  Where:  PCXX *q* = PCXXR *r, q, DAM* | 4.6.4.1.1  4.6.4.1.2  4.6.4.1.3  4.6.4.1.4  4.6.4.1.5 | Input:  PCXXR  MCPCXX  Intermediate:  PCXX  Output:  PCXXAMT |
| Day-Ahead Procured Capacity for Ancillary Service Only Amount  (DAPCRUOAMT)  (DAPCRDOAMT)  (DAPCRROAMT)  (DAPCNSOAMT)  (DAPCECROAMT) | Effective  12-05-2025  to  Present | Where ‘XX’ is a placeholder for the following AS types (RU, RD, RR, NS, or ECR):  DAPCXXOAMT *q* = (-1) \* MCPCXX *DAM* \*DAXXOAWD *q* | 4.6.4.1.1  4.6.4.1.2  4.6.4.1.3  4.6.4.1.4  4.6.4.1.5 | Input:  MCPCXX  DAXXOAWD  Ouput:  DAPCXXOAMT |
| Day-Ahead Ancillary Service Charge  (DARUAMT)  (DARDAMT)  (DARRAMT)  (DANSAMT)  (DAECRAMT) | Effective  06-10-2023  to  12-04-2025 | Where ‘XX’ is a placeholder for the following AS types (RU, RD, RR, NS, or ECR):  DAXXAMT *q* = DAXXPR \* DAXXQ *q*  Where:  DAXXPR = (-1) \* PCXXAMTTOT / DAXXQTOT  PCXXAMTTOT =PCXXAMT *q*  DAXXQTOT =DAXXQ *q*  DAXXQ *q*= DAXXO *q* – DASAXXQ *q* | 4.6.4.2.1  4.6.4.2.2  4.6.4.2.3  4.6.4.2.4  4.6.4.2.5 | Input:  PCXXAMT  DAXXO  DASAXXQ  Intermediate:  DAXXQ  DAXXQTOT  PCXXAMTTOT  DAXXPR  Output:  DAXXAMT |
| Day-Ahead Ancillary Service Charge  (DARUAMT)  (DARDAMT)  (DARRAMT)  (DANSAMT)  (DAECRAMT) | Effective  12-05-2025  to  Present | Where ‘XX’ is a placeholder for the following AS types (RU, RD, RR, NS, or ECR):  DAXXAMT *q* = DAXXPR \* DAXXQ *q*  Where:  DAXXPR = (-1) \* DAPCXXAMTTOT / DAXXQTOT  DAPCXXAMTTOT =(PCXXAMT *q* + DAPCXXOAMT *q*)  DAXXQTOT =DAXXQ *q*  DAXXQ *q*= DAXXO *q* – DASAXXQ *q* | 4.6.4.2.1  4.6.4.2.2  4.6.4.2.3  4.6.4.2.4  4.6.4.2.5 | Input:  PCXXAMT  DAPCXXOAMT  DAXXO  DASAXXQ  Intermediate:  DAXXQ  DAXXQTOT  DAPCXXAMTTOT  DAXXPR  Output:  DAXXAMT |
| Day-Ahead Obligation Amount (DAOBLAMT) | Effective  07-01-2019  To  Present | If the PTP Obligation has a non-positive value, i.e. (DAOBLPR *(j, k)* ≤ 0), or the sink, *k*, is a Load Zone or Hub, then  DAOBLAMT *o, (j, k)* = (-1) \* DAOBLTP *o, (j, k)*  If the PTP Obligation has a positive value and the sink is a Resource Node, then  DAOBLAMT *o, (j, k)* = (-1) \* Max ((DAOBLTP *o, (j, k)* – DAOBLDA *o, (j, k)*), Min (DAOBLTP *o, (j, k)*, DAOBLHV *o, (j, k)*))  Where:  The target payment:  DAOBLTP *o, (j, k)* = DAOBLPR *(j, k)* \* DAOBL *o, (j, k)*  The price based on the difference of the Settlement Point Prices:  DAOBLPR *(j, k)* = DASPP *k* - DASPP *j*  The derated amount:  DAOBLDA *o, (j, k)* = OBLDRPR *(j, k)* \* DAOBL *o, (j, k)*  The price used to calculate the derated amount:  OBLDRPR *(j, k)* =(Max (0, DAWASF *j, c* – DAWASF *k, c*) \* DASP *c* \* DRF*c*)  The hedge value:  DAOBLHV *o, (j, k)* = DAOBLHVPR *(j, k)* \* DAOBL *o, (j, k)*  Where the price of the hedge value:  If the source, *j*, is a Load Zone or Hub and the sink, *k*, is a Resource Node,  DAOBLHVPR *(j, k)* = Max (0, MAXRESPR *k* – DASPP *j*)  If the source, *j*, is a Resource Node and the sink, *k*, is also a Resource Node,  DAOBLHVPR *(j, k)* = Max (0, MAXRESPR *k* – MINRESPR *j*)  DAOBLAMTOTOT *o* = DAOBLCROTOT *o* + DAOBLCHOTOT *o*  Where:  DAOBLCROTOT *o*=Min (0, DAOBLAMT *o, (j, k)*)  DAOBLCHOTOT *o*=Max (0, DAOBLAMT *o, (j, k)*)  DAOBLCRTOT = DAOBLCROTOT *o*  DAOBLCHTOT = DAOBLCHOTOT *o* | 7.9.1.1  7.9.1.3  7.9.3.2 | Input:  DAOBL  DASPP  DAWASF  DASP  DRF  MINRESPR  MAXRESPR  Intermediate:  DAOBLTP  DAOBLPR  DAOBLDA  OBLDRPR  DAOBLHV  DAOBLHVPR  Output:  DAOBLAMT  DAOBLCROTOT  DAOBLCHOTOT  DAOBLAMTOTOT  DAOBLCRTOT  DAOBLCHTOT |
| Day-Ahead Option Amount (DAOPTAMT) | Effective  07-01-2019  To  Present | If the sink, *k,* is a Load Zone or Hub, then  DAOPTAMT *o, (j, k)* = (-1) \* DAOPTTP *o, (j, k)*  If sink, *k*, is a Resource Node, then  DAOPTAMT *o, (j, k)* = (-1) \* Max ((DAOPTTP *o, (j, k)* – DAOPTDA *o, (j, k)*), Min (DAOPTTP *o, (j, k)*, DAOPTHV *o, (j, k)*))  Where:  The target payment:  DAOPTTP *o, (j, k)* = DAOPTPR *(j, k)* OPT *o, (j, k)*  The price based on the difference of the Settlement Point Prices:  DAOPTPR *o, (j, k)* = Max (0, DASPP *k* – DASPP *j*)  The derated amount:  DAOPTDA *o, (j, k)* = OPTDRPR *(j, k)* \* OPT *o, (j, k)*  The price used to calculate the derated amount:  OPTDRPR *(j, k)* =(Max (0, DAWASF *j, c* – DAWASF *k, c*) \* DASP *c* \* DRF*c*)  The hedge value:  DAOPTHV *o, (j, k* = DAOPTHVPR *(j, k)* \* OPT *o, (j, k)*  Where the price of the hedge value:  If the source, *j*, is a Load Zone or Hub and the sink, *k*, is a Resource Node,  DAOBLHVPR *(j, k)* = Max (0, MAXRESPR *k* – DASPP *j*)  If the source, *j*, is a Resource Node and the sink, *k*, is also a Resource Node,  DAOBLHVPR *(j, k)* = Max (0, MAXRESPR *k* – MINRESPR *j*)  **DAOPTAMTOTOT *o* =****DAOPTAMT *o, (j, k)***  DAOPTAMTTOT = DAOPTAMTOTOT *o* | 7.9.1.2  7.9.1.3  7.9.3.2 | Input:  OPT  DASPP  DAWASF  DASP  DRF  MAXRESPR  MINRESPR  Intermediate:  DAOPTTP  DAOPTPR  DAOPTDA  OPTDRPR  DAOPTHV  DAOPTHVPR  Output:  DAOPTAMT  DAOPTAMTOTOT  DAOPTAMTTOT |
| Day-Ahead Obligation with Refund Amount  (DAOBLRAMT) | Effective  07-01-2019  To  Present | DAOBLRAMT *o, (j, k)* = (-1) \* DAOBLPR *(j, k)* \* Min (DAOBLR *o, (j, k)*, OBLRACT *o, (j, k)*)  Where:  DAOBLPR *(j, k)* = DASPP *k* – DASPP *j*  OBLRACT *o, (j, k)* = (OBLROF *o, r* \* RESACT *r*\* OBLRF *o, r, (j, k)*)  OBLROF *o, r* = 1 (per protocol definition)  If (A valid OS *r, y* exists for all SCED intervals within the hour)  RESACT *r* = (OS *r, y* \* TLMP *y*) / (TLMP *y*)  Otherwise  RESACT *r*  = TGFTH *r*  DAOBLRAMTOTOT *o* = DAOBLRCROTOT *o* + DAOBLRCHOTOT *o*  DAOBLRCRTOT =DAOBLRCROTOT *o*  DAOBLRCHTOT = DAOBLRCHOTOT *o*  Where:  DAOBLRCROTOT *o* = Min (0, DAOBLRAMT *o, (j, k)*)  DAOBLRCHOTOT *o* = Max (0, DAOBLRAMT *o, (j, k)*) | 7.9.1.5  7.9.3.2 | Input:  DAOBLR  DASPP  OBLRF  Intermediate:  DAOBLPR  RESACT  OBLROF  OBLRACT  Output:  DAOBLRAMT  DAOBLRCROTOT  DAOBLRCHOTOT  DAOBLRAMTOTOT  DAOBLRCRTOT  DAOBLRCHTOT |
| Day-Ahead Option with Refund Amount  (DAOPTRAMT) | Effective  07-01-2019  To  Present | DAOPTRAMT *o, (j, k)* = (-1) \* DAOPTPR *(j, k)* \* Min (OPTR *o, (j, k)*, OPTRACT *o, (j, k)*)  Where:  DAOPTPR *(j, k)* = Max (0, DASPP *k* – DASPP *j*)  OPTRACT *o, (j, k* = (OPTROF *o, r* \* RESACT *r*\* OPTRF *o, r, (j, k)*)  If (A valid OS *r, y* exists for all SCED intervals within the hour)  RESACT *r* = (OS *r, y* \* TLMP *y*) / (TLMP *y*)  Otherwise  RESACT *r*  = TGFTH *r*  DAOPTRAMTOTOT *o* = DAOPTRAMT *o, (j, k)*  DAOPTRAMTTOT = DAOPTRAMTOTOT o | 7.9.1.6  7.9.3.2 | Input:  OPTR  DASPP  OPTRF  Intermediate:  DAOPTPR  RESACT  OPTROF  OPTRACT  Output:  DAOPTRAMT  DAOPTRAMTOTOT  DAOPTRAMTTOT |
| Day-Ahead Shortfall Amount (DACRRSAMT) | Effective  10-12-2016  To  Present | DACRRSAMT o = DACRRSAMTTOT \* CRRCRRSDA *o*  Where:  DACRRSAMTTOT = (-1) \* Min (0, DACONGRENT + DACRRCRTOT + DACRRCHTOT)  CRRCRRSDA *o* = (DAOBLCROTOT *o* + DAOBLRCROTOT *o* + DAOPTAMTOTOT *o* + DAOPTRAMTOTOT *o*) / DACRRCRTOT  Where:  DACONGRENT = DAESAMTTOT + DAEPAMTTOT + DARTOBLAMTTOT + DARTOBLLOAMTTOT  DACRRCRTOT = DAOBLCRTOT + DAOBLRCRTOT + DAOPTAMTTOT + DAOPTRAMTTOT  DACRRCHTOT = DAOBLCHTOT + DAOBLRCHTOT  The calculation for DAESAMTTOT is described in the DAESAMT section.  The calculation for DAEPAMTTOT is described in the DAEPAMT section.  The calculation for DARTOBLAMTTOT is described in the DARTOBLAMT section.  The calculation for DARTOBLLOAMTTOT is described in the DARTOBLLOAMT section.  The calculations for DAOBLCROTOT, DAOBLCRTOT and DAOBLCHTOT are described in the DAOBLAMT section.  The calculations for DAOPTAMTOTOT and DAOPTAMTTOT are described in the DAOPTAMT section.  The calculations for DAOBLRCROTOT, DAOBLRCRTOT and DAOBLRCHTOT are described in the DAOBLRAMT section.  The calculations for DAOPTRAMTOTOT and DAOPTRAMTTOT are described in the DAOPTRAMT section. | 7.9.3.1  7.9.3.2  7.9.3.3 | Inputs:  DAESAMTTOT  DAEPAMTTOT  DARTOBLAMTTOT  DARTOBLLOAMTTOT  DAOBLCROTOT  DAOBLRCROTOT  DAOPTAMTOTOT  DAOPTRAMTOTOT  DAOBLCHTOT  DAOBLRCHTOT  Intermediate:  DACRRCRTOT  DACRRCHTOT  DACONGRENT  CRRCRRSDA  DACRRSAMTTOT  Output:  DACRRSAMT |

# Real-Time Market Statement Charge Types

| **Charge Type** | **Effective Dates** | **Protocol Formula** | **Protocol Sec.** | **Bill Determinants** |
| --- | --- | --- | --- | --- |
| RUC Make-Whole Payment (RUCMWAMT) | Effective  04-02-2021  to  12-04-2025 | RUCMWAMT*q, r, p, h* = (-1) \* Max (0, RUCG*q, r, p, d* – RUCMEREV*q, r, p, d* – RUCEXRR*q, r, p, d* – RUCEXRQC*q, r, p, d*) / RUCHR*q, r, p, h*  RUC Hour Total (RUCHR) is calculated as follows:  If the Resource is RUC-Committed for the hour (RUC = 1),  Then, RUCHR*q, r, p, h* = 1  Else, RUCHR*q, r, p, h* = 0  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ RUC Guarantee (RUCG) is calculated as follows:  **For Generation Resources (non-Combined-Cycle);**  For each RUC-Committed Generation Resource, calculate RUCG for each eligible start and for each settlement interval within all RUC-Committed hours for the Operating Day as follows:  RUCG*q, r, p, d* = (SUPR*q, r, p, st* \* RUCSUFLAG*q, r, p, h*) + (RUCGME*q, r, p, i*) – ADJRUCG*q, r, p, d*  Where for each Settlement interval *i*:  RUCGME*q, r, p, i* = MEPR*q, r, p, h* \* Min ((LSL*q, r, p, h* \* (¼)), RTMG*q, r, p, i*)  **For Combined-Cycle Resources;**  For each RUC-Committed Train, calculate RUCG for each eligible start, each eligible startup transition and for each settlement interval within all RUC-Committed hours for the Operating Day as follows:  RUCG*q, r, p, d* = (SUPR*q, r, p, st* \* RUCSUFLAG*q, r, p, h*) + (Max (0, (SUPRafterCCGR - SUPRbeforeCCGR))) + (RUCGME*q, r, p, i*) – ADJRUCG*q, r, p, d*  Where for each Settlement interval *i*:  If the interval is RUC-Committed (RUC = 1) but not RUC-Committed for Additional Capacity (RUCAC <>1):  RUCGME*q, r, p, i* = MEPR*q, r, p, h* \* Min ((LSL*q, r, p, h* \* (¼)), RTMG*q, r, p, i*)  If the interval is RUC-Committed for Additional Capacity (RUC = 1 & RUCAC =1):  RUCGME*q, r, p, i* = Max [0, MEPR*q, afterCCGR, p, h* \* Min ((LSL*q, afterCCGR, p, h* \* (¼)), RTMG*q, r, p, i*) – MEPR*q, beforeCCGR, p, h* \* (LSL*q, beforeCCGR, p, h* \* (¼))]  Where:  The MEPR and LSL for *r* and *afterCCGR* used to calculate each 15-minute interval for a Train is the MEPR and LSL that corresponds to the Configuration that is RUC-Committed for the hour.  The MEPR and LSL for *beforeCCGR* used to calculate each interval for a Train is the MEPR and LSL that corresponds to the Configuration that was QSE-Committed for that hour prior to a RUC instruction for Additional Capacity.  Startup Transitions:  All startup transitions where the Combined Cycle Train transitions to a RUC-committed configuration from a QSE-committed or other RUC-committed configuration between two contiguous hours, or to a RUC-committed configuration from a QSE-committed configuration within the same hour due to a RUC for Additional Capacity (RUCAC) shall be calculated as reflected in the above RUCG formula.  If the Combined Cycle Train transitions to a QSE-Committed configuration from a RUC committed configuration between two contiguous hours, the startup transition shall be calculated as follows:  Max (0, (SUPR*beforeCCGR* - SUPR*afterCCGR*))  Startup Price and Minimum-Energy Price:  If the QSE submitted a validated Three-Part Supply Offer, SUPR*q, r, p, st* = Min (SUO*q, r, p, st*, SUCAP*q, r, p, st*) MEPR *q, r, p, h* = Min (MEO *q, r, p, h*, MECAP *q, r, p, h*)  Otherwise,  SUPR*q, r, p, st* = SUCAP*q, r, p, st*  MEPR*q, r, p, h* = MECAP*q, r, p, h*  If approved verifiable startup and minimum-energy costs exist for the Resource,  For a non-AGR Resource:  SUCAP*q, r, p, st* = VERISU*q, r, p, st*  MECAP*q, r, p, h* = VERIME*q, r, p, h*  Otherwise,  SUCAP*q, r, p, st* = RCGSC  MECAP*q, r, p, h* = RCGMEC  For an AGR Resource:  SUCAP*q, r, p, st* = Max*c* (AGRRATIO*q, r, p, h*) \* VERISU*q, r, p, st* MECAP*q, r, p, h* = VERIME*q, r, p, h*  Otherwise,  SUCAP*q, r, p, st* = Max*c* (AGRRATIO*q, r, p, h*) \* RCGSC  MECAP*q, r, p, h* = RCGMEC  Where, AGRRATIO*q, r, p, h* = AGRMAXON*q, r, p, h* / AGRTOT *r*  Verifiable startup and minimum-energy costs:  VERISU*q, r, p, st* = [AFCRS*q, r, p, st* \* ((GASPERSU*q, r, p, st* \* FIP) + (OILPERSU*q, r, p, st* \* FOP) + (SFPERSU*q, r, p, st* \* SFP))] + VOMS*q, r, p, st*  VERIME*q, r, p, h* = [VFCLSL*q, r, p* \* ((GASPERME*q, r, p* \* FIP) + (OILPERME*q, r, p* \* FOP) + (SFPERME*q, r, p* \* SFP))] + VOMLSL*q, r, p*  Where *d* = an Operating Day with at least one RUC-Committed Hour (RUCHR = 1)  Where *h* = a RUC-Committed Hour (RUCHR = 1)  Where *i* = 15-minute Settlment interval in a RUC-Committed Hour (RUCHR = 1)  Where *s* = eligible start (RUCSUFLAG =1)  Where *st* = start type (STARTTYPE = 1 (hot), 2 (intermediate) or 3 (cold)  Where *t* = eligible startup transition (RUCTFLAG <> 0)  Where *afterCCGR* = the RUC-Committed Configuration (RUC = 1)  Where *beforeCCGR* = the previously QSE-Committed Configuration (RUCAC = 1)  Where *c* = a contiguous block of RUC-committed Hours  And where: ADJRUCG is a business required adjustment, beyond what is in the protocol.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ RUC Minimum-Energy (RUCMEREV) is calculated as follows:  The energy revenue for the Resource’s generation up to and including LSL during RUC-Committed Hours is calculated as follows:   RUCMEREV*q, r, p, d* = (RUCMEREV96*q, r, p, i*)  Where for each Settlement interval *i*:  If the interval is RUC-Committed (RUC = 1) but not RUC-Committed for Additional Capacity (RUCAC <>1):  RUCMEREV96*q, r, p, i* = RTSPP*p, i* \* Min (RTMG*q, r, p, i*, (LSL*q, r, p, h* \* (¼)))  If the interval is RUC-Committed for Additional Capacity (RUC = 1 & RUCAC =1):  RUCMEREV96*q, r, p, i* = RTSPP*p, i* \* [Max (0, Min (RTMG*q, r, p, i*, (LSL*q, afterCCGR, p, h* \* (¼))) - (LSL*q, beforeCCGR, p, h* \* (¼))]  Where *d* = an Operating Day with at least one RUC-Committed Hour (RUCHR = 1)  Where *h* = a RUC-Committed Hour (RUCHR = 1)  Where *i* = 15-minute Settlment interval in a RUC-Committed Hour (RUCHR = 1)  Where *afterCCGR* = the RUC-Committed Configuration (RUC = 1)  Where *beforeCCGR* = the previously QSE-Committed Configuration (RUCAC = 1)  And where:  The LSL for *r* and *afterCCGR* used to calculate each interval for a Train is the LSL that corresponds to the Configuration that is RUC-Committed for that hour.  The LSL for *beforeCCGR* used to calculate each interval for a Train is the LSL that corresponds to the Configuration that was QSE-Committed for that hour prior to a RUC instruction for Additional Capacity.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Revenue Less Cost Above LSL During RUC-Committed Hours (RUCEXRR) is calculated as follows:  The total revenue for the Resource operating above LSL, less the cost, during all RUC-Committed Hours is calculated as follows:  RUCEXRR*q, r, p, d* = Max {0, [RUCEXRR96*q, r, p, i*]}  Where for each Settlement interval *i*:  RUCEXRR96*q, r, p, i* = RTSPP*p, i* \* Max (0, RTMG*q, r, p, i* – (LSL*q, r, p, h* \* (¼)) + (-1) \* (VSSVARAMT*q, r, p, i* + VSSEAMT*q, r, p, i*) + (-1) \* EMREAMT*q, r, p, i*  - RTEOCOST*q, r, p, i* \* Max (0, RTMG*q, r, p, i* – (LSL*q, r, p, h* \* (¼)))]  Where *d* = an Operating Day with at least one RUC-Committed Hour (RUCHR = 1)  Where *h* = a RUC-Committed Hour (RUCHR = 1)  Where *i* = 15-minute Settlment interval in a RUC-Committed Hour (RUCHR = 1)  And where:  The LSL used to calculate each interval for a Train is the LSL that corresponds to the Configuration that is RUC-Committed for that hour.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Revenue Less Cost During QSE Clawback Intervals (RUCEXRQC) is calculated as follows:  The total revenue for the Resource operating, less the cost, during all QSE Clawback Hours is calculated as follows:  RUCEXRQC*q, r, p, d* = Max {0, [(RTSPP *p, I* \* RTMG*q, r, p, i*) + (-1) \* (VSSVARAMT*q, r, p, i* + VSSEAMT*q, r, p, i*) + (-1) \* EMREAMT*q, r, p, i*  - [MEPR*q, r, p, h* \* Min (RTMG*q, r, p, i* (LSL*q, r, p, h* \* (1/4)))] – [RTEOCOST*q, r, p, i* \* Max (0, RTMG*q, r, p, i* - (LSL*q, r, p, h* \* (1/4)))]]}  Where *d* = an Operating Day with at least one RUC-Committed Hour (RUCHR = 1)  Where *h* = hour that includes a 15-minute QSE Clawback interval (QCLAW = 1)  Where *i* = 15-minute QSE Clawback interval (QCLAW = 1)  And where:  The LSL and MEPR used to calculate each interval for aTrain is the LSL and MEPR that corresponds to the Configuration the Train operates in Real-Time during the QSE-Clawback interval. The Configurations a Train operates in Real-Time during each QSE-Clawback interval is determined by Telemetered Configuration status (CCTS).  The calculation of MEPR is described in the RUCG section (above).  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate RUCMWAMTQSETOT for each QSE by aggregating all RUCMWAMT calculated for each Resource represented by that QSE, for each hour of the Operating Day:  RUCMWAMTQSETOT *q, h*=  RUCMWAMT *q, r, p, h*  Calculate RUCMWAMTRUCTOT for each RUC Process from which a RUC-Commitment is issued by aggregating, for each hour, all RUCMWAMT resulting from a RUC commitment issued from that RUC Process:  RUCMWAMTRUCTOT *ruc, h*  =  (RUCMWAMT *q, r, p, h*)  Calculate RUCMWAMTTOT for the Operating Day by aggregating all RUCMWAMTQSETOT, for each hour of the Operating Day:  RUCMWAMTTOT =  RUCMWAMTQSETOT *q* | 5.7.1  5.7.1.1  5.7.1.2  5.7.1.3  5.7.1.4 | Input:  RUC  RUCAC  SUO  MEO  VFCLSL  GASPERME  OILPERME  SFPERME  VOMLSL  AFCRS  GASPERSU  OILPERSU  SFPERSU  VOMS  FIP  FOP  SFP  RCGMEC  RTPERFIPME  RTPERFOPME  RCGSC  AGRMAXON  AGRTOT  DASUO  RTSPP  RTMG  LSL  VSSVARAMT  VSSEAMT  EMREAMT  RTEOCOST  RUCSUFLAG  RUCTFLAG  STARTTYPE  DASTARTTYPE  ADJRUCG  CCTS  QCLAW  Intermediate:  RUCHR  VERISU  VERIME  AGRRATIO  SUPR  MEPR  RUCG  RUCGME  RUCMEREV  RUCMEREV96  RUCEXRR  RUCEXRR96  RUCEXRQC  Output:  RUCMWAMT  RUCMWAMTQSETOT  RUCMWAMTRUCTOT  RUCMWAMTTOT |
| RUC Make-Whole Payment (RUCMWAMT) | Effective  12-05-2025  to  Present | RUCMWAMT*q, r, p, h* = (-1) \* Max (0, RUCG*q, r, p, d* – RUCMEREV*q, r, p, d* – RUCEXRR*q, r, p, d* – RUCEXRQC*q, r, p, d*) / RUCHR*q, r, p, h*  RUC Hour Total (RUCHR) is calculated as follows:  If the Resource is RUC-Committed for the hour (RUC = 1),  Then, RUCHR*q, r, p, h* = 1  Else, RUCHR*q, r, p, h* = 0  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ RUC Guarantee (RUCG) is calculated as follows:  **For Generation Resources (non-Combined-Cycle);**  For each RUC-Committed Generation Resource, calculate RUCG for each eligible start and for each settlement interval within all RUC-Committed hours for the Operating Day as follows:  RUCG*q, r, p, d* = (SUPR*q, r, p, st* \* RUCSUFLAG*q, r, p, h*) + (RUCGME*q, r, p, i*) – ADJRUCG*q, r, p, d*  Where for each Settlement interval *i*:  RUCGME*q, r, p, i* = MEPR*q, r, p, h* \* Min ((LSL*q, r, p, h* \* (¼)), RTMG*q, r, p, i*)  **For Combined-Cycle Resources;**  For each RUC-Committed Train, calculate RUCG for each eligible start, each eligible startup transition and for each settlement interval within all RUC-Committed hours for the Operating Day as follows:  RUCG*q, r, p, d* = (SUPR*q, r, p, st* \* RUCSUFLAG*q, r, p, h*) + (Max (0, (SUPRafterCCGR - SUPRbeforeCCGR))) + (RUCGME*q, r, p, i*) – ADJRUCG*q, r, p, d*  Where for each Settlement interval *i*:  If the interval is RUC-Committed (RUC = 1) but not RUC-Committed for Additional Capacity (RUCAC <>1):  RUCGME*q, r, p, i* = MEPR*q, r, p, h* \* Min ((LSL*q, r, p, h* \* (¼)), RTMG*q, r, p, i*)  If the interval is RUC-Committed for Additional Capacity (RUC = 1 & RUCAC =1):  RUCGME*q, r, p, i* = Max [0, MEPR*q, afterCCGR, p, h* \* Min ((LSL*q, afterCCGR, p, h* \* (¼)), RTMG*q, r, p, i*) – MEPR*q, beforeCCGR, p, h* \* (LSL*q, beforeCCGR, p, h* \* (¼))]  Where:  The MEPR and LSL for *r* and *afterCCGR* used to calculate each 15-minute interval for a Train is the MEPR and LSL that corresponds to the Configuration that is RUC-Committed for the hour.  The MEPR and LSL for *beforeCCGR* used to calculate each interval for a Train is the MEPR and LSL that corresponds to the Configuration that was QSE-Committed for that hour prior to a RUC instruction for Additional Capacity.  Startup Transitions:  All startup transitions where the Combined Cycle Train transitions to a RUC-committed configuration from a QSE-committed or other RUC-committed configuration between two contiguous hours, or to a RUC-committed configuration from a QSE-committed configuration within the same hour due to a RUC for Additional Capacity (RUCAC) shall be calculated as reflected in the above RUCG formula.  If the Combined Cycle Train transitions to a QSE-Committed configuration from a RUC committed configuration between two contiguous hours, the startup transition shall be calculated as follows:  Max (0, (SUPR*beforeCCGR* - SUPR*afterCCGR*))  Startup Price and Minimum-Energy Price:  If the QSE submitted a validated Three-Part Supply Offer, SUPR*q, r, p, st* = Min (SUO*q, r, p, st*, SUCAP*q, r, p, st*) MEPR *q, r, p, h* = Min (MEO *q, r, p, h*, MECAP *q, r, p, h*)  Otherwise,  SUPR*q, r, p, st* = SUCAP*q, r, p, st*  MEPR*q, r, p, h* = MECAP*q, r, p, h*  If approved verifiable startup and minimum-energy costs exist for the Resource,  For a non-AGR Resource:  SUCAP*q, r, p, st* = VERISU*q, r, p, st*  MECAP*q, r, p, h* = VERIME*q, r, p, h*  Otherwise,  SUCAP*q, r, p, st* = RCGSC  MECAP*q, r, p, h* = RCGMEC  For an AGR Resource:  SUCAP*q, r, p, st* = Max*c* (AGRRATIO*q, r, p, h*) \* VERISU*q, r, p, st* MECAP*q, r, p, h* = VERIME*q, r, p, h*  Otherwise,  SUCAP*q, r, p, st* = Max*c* (AGRRATIO*q, r, p, h*) \* RCGSC  MECAP*q, r, p, h* = RCGMEC  Where, AGRRATIO*q, r, p, h* = AGRMAXON*q, r, p, h* / AGRTOT *r*  Verifiable startup and minimum-energy costs:  VERISU*q, r, p, st* = [AFCRS*q, r, p, st* \* ((GASPERSU*q, r, p, st* \* FIP) + (OILPERSU*q, r, p, st* \* FOP) + (SFPERSU*q, r, p, st* \* SFP))] + VOMS*q, r, p, st*  VERIME*q, r, p, h* = [VFCLSL*q, r, p* \* ((GASPERME*q, r, p* \* FIP) + (OILPERME*q, r, p* \* FOP) + (SFPERME*q, r, p* \* SFP))] + VOMLSL*q, r, p*  Where *d* = an Operating Day with at least one RUC-Committed Hour (RUCHR = 1)  Where *h* = a RUC-Committed Hour (RUCHR = 1)  Where *i* = 15-minute Settlment interval in a RUC-Committed Hour (RUCHR = 1)  Where *s* = eligible start (RUCSUFLAG =1)  Where *st* = start type (STARTTYPE = 1 (hot), 2 (intermediate) or 3 (cold)  Where *t* = eligible startup transition (RUCTFLAG <> 0)  Where *afterCCGR* = the RUC-Committed Configuration (RUC = 1)  Where *beforeCCGR* = the previously QSE-Committed Configuration (RUCAC = 1)  Where *c* = a contiguous block of RUC-committed Hours  And where: ADJRUCG is a business required adjustment, beyond what is in the protocol.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ RUC Minimum-Energy (RUCMEREV) is calculated as follows:  The energy revenue for the Resource’s generation up to and including LSL during RUC-Committed Hours is calculated as follows:   RUCMEREV*q, r, p, d* = (RUCMEREV96*q, r, p, i*)  Where for each Settlement interval *i*:  If the interval is RUC-Committed (RUC = 1) but not RUC-Committed for Additional Capacity (RUCAC <>1):  RUCMEREV96*q, r, p, i* = RTSPP*p, i* \* Min (RTMG*q, r, p, i*, (LSL*q, r, p, h* \* (¼)))  If the interval is RUC-Committed for Additional Capacity (RUC = 1 & RUCAC =1):  RUCMEREV96*q, r, p, i* = RTSPP*p, i* \* [Max (0, Min (RTMG*q, r, p, i*, (LSL*q, afterCCGR, p, h* \* (¼))) - (LSL*q, beforeCCGR, p, h* \* (¼))]  Where *d* = an Operating Day with at least one RUC-Committed Hour (RUCHR = 1)  Where *h* = a RUC-Committed Hour (RUCHR = 1)  Where *i* = 15-minute Settlment interval in a RUC-Committed Hour (RUCHR = 1)  Where *afterCCGR* = the RUC-Committed Configuration (RUC = 1)  Where *beforeCCGR* = the previously QSE-Committed Configuration (RUCAC = 1)  And where:  The LSL for *r* and *afterCCGR* used to calculate each interval for a Train is the LSL that corresponds to the Configuration that is RUC-Committed for that hour.  The LSL for *beforeCCGR* used to calculate each interval for a Train is the LSL that corresponds to the Configuration that was QSE-Committed for that hour prior to a RUC instruction for Additional Capacity.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Real-Time Ancillary Service Revenue (RTASREV) is calculated as follows:  The total Real-Time Ancillary Service Revenue for the Resource is calculated as follows:   RTASREV*q, r, i* = RTRUREV*q, r, i* + RTRDREV*q, r, i* + RTRRREV*q, r, i* + RTNSREV*q, r, i* + RTECRREV*q, r, i*  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Revenue Less Cost Above LSL During RUC-Committed Hours (RUCEXRR) is calculated as follows:  The total revenue for the Resource operating above LSL, less the cost, during all RUC-Committed Hours is calculated as follows:  RUCEXRR*q, r, p, d* = Max {0, [RUCEXRR96*q, r, p, i*]}  Where for each Settlement interval *i*:  RUCEXRR96*q, r, p, i* = RTSPP*p, i* \* Max (0, RTMG*q, r, p, i* – (LSL*q, r, p, h* \* (¼)) + RTASREV*q, r, i* + (-1) \* (VSSVARAMT*q, r, p, i* + VSSEAMT*q, r, p, i*) + (-1) \* EMREAMT*q, r, p, i* - RTEOCOST*q, r, p, i* \* Max (0, RTMG*q, r, p, i* – (LSL*q, r, p, h* \* (¼)))]  Where *d* = an Operating Day with at least one RUC-Committed Hour (RUCHR = 1)  Where *h* = a RUC-Committed Hour (RUCHR = 1)  Where *i* = 15-minute Settlment interval in a RUC-Committed Hour (RUCHR = 1)  And where:  The LSL used to calculate each interval for a Train is the LSL that corresponds to the Configuration that is RUC-Committed for that hour.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Revenue Less Cost During QSE Clawback Intervals (RUCEXRQC) is calculated as follows:  The total revenue for the Resource operating, less the cost, during all QSE Clawback Hours is calculated as follows:  RUCEXRQC*q, r, p, d* = Max {0, [(RTSPP *p, I* \* RTMG*q, r, p, i*) + RTASREV*q, r, i* + (-1) \* (VSSVARAMT*q, r, p, i* + VSSEAMT*q, r, p, i*) + (-1) \* EMREAMT*q, r, p, i*  - [MEPR*q, r, p, h* \* Min (RTMG*q, r, p, i* (LSL*q, r, p, h* \* (1/4)))] – [RTEOCOST*q, r, p, i* \* Max (0, RTMG*q, r, p, i* - (LSL*q, r, p, h* \* (1/4)))]]}  Where *d* = an Operating Day with at least one RUC-Committed Hour (RUCHR = 1)  Where *h* = hour that includes a 15-minute QSE Clawback interval (QCLAW = 1)  Where *i* = 15-minute QSE Clawback interval (QCLAW = 1)  And where:  The LSL and MEPR used to calculate each interval for aTrain is the LSL and MEPR that corresponds to the Configuration the Train operates in Real-Time during the QSE-Clawback interval. The Configurations a Train operates in Real-Time during each QSE-Clawback interval is determined by Telemetered Configuration status (CCTS).  The calculation of MEPR is described in the RUCG section (above).  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate RUCMWAMTQSETOT for each QSE by aggregating all RUCMWAMT calculated for each Resource represented by that QSE, for each hour of the Operating Day:  RUCMWAMTQSETOT *q, h*=  RUCMWAMT *q, r, p, h*  Calculate RUCMWAMTRUCTOT for each RUC Process from which a RUC-Commitment is issued by aggregating, for each hour, all RUCMWAMT resulting from a RUC commitment issued from that RUC Process:  RUCMWAMTRUCTOT *ruc, h*  =  (RUCMWAMT *q, r, p, h*)  Calculate RUCMWAMTTOT for the Operating Day by aggregating all RUCMWAMTQSETOT, for each hour of the Operating Day:  RUCMWAMTTOT =  RUCMWAMTQSETOT *q* | 5.7.1  5.7.1.1  5.7.1.2  5.7.1.3  5.7.1.4 | Input:  RUC  RUCAC  SUO  MEO  VFCLSL  GASPERME  OILPERME  SFPERME  VOMLSL  AFCRS  GASPERSU  OILPERSU  SFPERSU  VOMS  FIP  FOP  SFP  RCGMEC  RTPERFIPME  RTPERFOPME  RCGSC  AGRMAXON  AGRTOT  DASUO  RTSPP  RTMG  LSL  VSSVARAMT  VSSEAMT  EMREAMT  RTEOCOST  RTRUREV  RTRDREV  RTRRREV  RTNSREV  RTECRREV  RUCSUFLAG  RUCTFLAG  STARTTYPE  DASTARTTYPE  ADJRUCG  CCTS  QCLAW  Intermediate:  RUCHR  VERISU  VERIME  AGRRATIO  SUPR  MEPR  RUCG  RUCGME  RUCMEREV  RUCMEREV96  RTASREV  RUCEXRR  RUCEXRR96  RUCEXRQC  Output:  RUCMWAMT  RUCMWAMTQSETOT  RUCMWAMTRUCTOT  RUCMWAMTTOT |
| RUC Claw Back Charge (RUCCBAMT) | Effective  03-01-2024  to  12-04-2025 | If (RUCMEREV *q, r, p, d* + RUCEXRR *q, r, p, d* – RUCACREV *q, r, p, d* – RUCG *q, r, p, d*) > 0,  Then,  RUCCBAMT*q, r, p, h* = [(RUCMEREV*q, r, p, d* + RUCEXRR*q, r, p, d* – RUCACREV*q, r, p, d* – RUCG*q, r, p, d*) \* RUCCBFR*q, r, p, d* + RUCEXRQC*q, r, p, d* \* RUCCBFC*q, r, p, d*] / RUCHR*q, r, p, h*  Otherwise,  RUCCBAMT*q, r, p, h* = [Max (0, RUCMEREV*q, r, p, d* + RUCEXRR*q, r, p, d* + RUCEXRQC*q, r, p, d* – RUCACREV*q, r, p, d* – RUCG*q, r, p, d*) \* RUCCBFC*q, r, p, d*] / RUCHR*q, r, p, h*  Where:  RUCAC revenue for a Combined Cycle Train:  RUCACREV*q, r, p, d* = Max [0,  RUCMEREV96*q, r, p, i* + Max (0,  RUCEXRR96*q, r, p, i*)]  RUC Clawback Factors:  If the QSE submits a valid Three-Part Supply Offer into the DAM (VTPSOFLAG*q, r, p, d* = 1) for the Resource,  Then,  RUCCBFR*q, r, p, d* = 1.0 for the Operating Day  RUCCBFC*q, r, p, d* = 1.0 for the Operating Day  Otherwise,  RUCCBFR*q, r, p, d* = 1.0 for the Operating Day  RUCCBFC*q, r, p, d* = 1.0 for the Operating Day  If EEA is in effect for any hour of the Operating Day (EEA *d* = 1) and if the QSE submits a valid Three-Part Supply Offer into the DAM (VTPSOFLAG*q, r, p, d* = 1) for the Resource,  Then,  RUCCBFR*q, r, p, d* = 1.0 for the Operating Day  RUCCBFC*q, r, p, d* = 1.0 for the Operating Day  Otherwise,  RUCCBFR*q, r, p, d* = 1.0 for the Operating Day  RUCCBFC*q, r, p, d* = 1.0 for the Operating Day  Where *d* = an Operating Day with at least one RUC-Committed Hour (RUCHR = 1)  Where *h* = a RUC-Committed Hour (RUCHR = 1)  Where *i* = 15-minute Settlment interval in a RUC for Additional Capacity Hour (RUCAC = 1)  The calculations for RUCG, RUCMEREV, RUCEXRR, RUCEXRQC & RUCHR are described in the RUCMWAMT section.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate RUCCBAMTQSETOT for each QSE by aggregating all RUCCBAMT calculated for each Resource represented by that QSE, for each hour of the Operating Day:  RUCCBAMTQSETOT *q, h*=  RUCCBAMT *q, r, p, h*  Calculate RUCCBAMTTOT for the Operating Day by aggregating all RUCCBAMTQSETOT, for each hour of the Operating Day:  RUCCBAMTTOT *h* = RUCCBAMTQSETOT *q, h* | 5.7.2 | Input:  EEA  VTPSOFLAG  RUCG  RUCMEREV  RUCEXRR  RUCEXRQC  RUCHR  RUCMEREV96  RUCEXRR96  RUCAC  Intermediate:  RUCCBFR  RUCCBFC  RUCACREV  Output:  RUCCBAMT  RUCCBAMTQSETOT  RUCCBAMTTOT |
| RUC Claw Back Charge (RUCCBAMT) | Effective  12-05-2025  to  Present | RUCCBAMT*q, r, p, h* = Max (0, RUCMEREV*q, r, p, d* + RUCEXRR*q, r, p, d* + RUCEXRQC*q, r, p, d* – RUCACREV*q, r, p, d* – RUCG*q, r, p, d*) / RUCHR*q, r, p, h*  Where:  RUCAC revenue for a Combined Cycle Train:  RUCACREV*q, r, p, d* = Max [0,  RUCMEREV96*q, r, p, i* + Max (0,  RUCEXRR96*q, r, p, i*)]  Where *d* = an Operating Day with at least one RUC-Committed Hour (RUCHR = 1)  Where *h* = a RUC-Committed Hour (RUCHR = 1)  Where *i* = 15-minute Settlment interval in a RUC for Additional Capacity Hour (RUCAC = 1)  The calculations for RUCG, RUCMEREV, RUCEXRR, RUCEXRQC & RUCHR are described in the RUCMWAMT section.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate RUCCBAMTQSETOT for each QSE by aggregating all RUCCBAMT calculated for each Resource represented by that QSE, for each hour of the Operating Day:  RUCCBAMTQSETOT *q, h*=  RUCCBAMT *q, r, p, h*  Calculate RUCCBAMTTOT for the Operating Day by aggregating all RUCCBAMTQSETOT, for each hour of the Operating Day:  RUCCBAMTTOT *h* = RUCCBAMTQSETOT *q, h* | 5.7.2 | Input:  RUCMEREV  RUCEXRR  RUCEXRQC  RUCG  RUCHR  RUCMEREV96  RUCEXRR96  RUCAC  Intermediate:  RUCACREV  Output:  RUCCBAMT  RUCCBAMTQSETOT  RUCCBAMTTOT |
| RUC Decommitment Payment (RUCDCAMT) | Effective  06-22-2016  to  Present | If the Resource is eligible for RUC-Decommitment payment (RUCDFLAG*q, r, p, h* = 1), then for the eligible contiguous decommitted period:  RUCDCAMT*q, r, p, h* = (-1) \* Max (0, (SUPR *q, r, p, st* - (Max (0, MEPR*q, r, p, h* – RTSPP*p, i*) \* (LSL*q, r, p, h* \* (¼))))) – ADJRUCD *q, r, p, c* / NCDCHR*q, r, p, h*  Where:  The SUPR, MEPR and LSL used to calculate each contiguous decommitted period for a Train shall be the SUPR, MEPR and LSL that corresponds to the Configuration that is decommitted in the first hour of the contiguous decommitted period.  Number of Continuous RUC-Decommitted Hours:  Calculate NCDCHR for each hour of a contiguous block of RUC-Decommitted hours equal to the sum of all contiguous decommitted hours in that block:  NCDCHR*q, r, p, h* = RUCD*q, r, p, h*  Startup Price and Minimum-Energy Price:  If the QSE submitted a validated Three-Part Supply Offer, SUPR*q, r, p, st* = Min (SUO*q, r, p, st*, SUCAP*q, r, p, st*) MEPR *q, r, p, h* = Min (MEO *q, r, p, h*, MECAP *q, r, p, h*)  Otherwise,  SUPR*q, r, p, st* = SUCAP*q, r, p, st*  MEPR*q, r, p, h* = MECAP*q, r, p, h*  If approved verifiable startup and minimum-energy costs exist for the Resource,  SUCAP*q, r, p, st* = VERISU*q, r, p, st*  MECAP*q, r, p, h* = VERIME*q, r, p, h*  Otherwise,  SUCAP*q, r, p, st* = RCGSC  MECAP*q, r, p, h* = RCGMEC  Verifiable startup and minimum-energy costs:  VERISU*q, r, p, st* = [AFCRS*q, r, p, st* \* ((GASPERSU*q, r, p, st* \* FIP) + (OILPERSU*q, r, p, st* \* FOP) + (SFPERSU*q, r, p, st* \* SFP))] + VOMS*q, r, p, st*  VERIME*q, r, p, h* = [VFCLSL*q, r, p* \* ((GASPERME*q, r, p* \* FIP) + (OILPERME*q, r, p* \* FOP) + (SFPERME*q, r, p* \* SFP))] + VOMLSL*q, r, p*  Where *d* = an Operating Day with at least one RUC-Decommitted Hour (NCDCHR > 0)  Where *h* = a RUC-Decommitted Hour (NCDCHR > 0)  Where *i* = 15-minute Settlment interval in a RUC-Decommitted Hour (NCDCHR > 0)  Where *st* = start type (RUCDSTARTTYPE = 1 (hot), 2 (intermediate) or 3 (cold)  Where *c* = a contiguous block of RUC-Decommitted Hours  And where: ADJRUCD is a business required adjustment, beyond what is in the protocol.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate RUCDCAMTQSETOT for each QSE by aggregating all RUCDCAMT calculated for each Resource represented by that QSE, for each hour of the Operating Day:  RUCDCAMTQSETOT *q, h*=  RUCDCAMT *q, r, p, h*  Calculate RUCDCAMTTOT for the Operating Day by aggregating all RUCDCAMTQSETOT, for each hour of the Operating Day:  RUCDCAMTTOT *h* = RUCDCAMTQSETOT *q, h* | 5.7.3 | Input:  RUCD  SUO  MEO  VFCLSL  GASPERME  OILPERME  SFPERME  VOMLSL  AFCRS  GASPERSU  OILPERSU  SFPERSU  VOMS  FIP  FOP  SFP  RCGMEC  RTPERFIPME  RTPERFOPME  RCGSC  RTSPP  LSL  RUCDFLAG  RUCDSTARTTYPE  ADJRUCD  Intermediate:  NCDCHR  SUPR  MEPR  VERISU  VERIME  Output:  RUCDCAMT  RUCDCAMTQSETOT  RUCDCAMTTOT |
| RUC Capacity-Short Charge (RUCCSAMT) | Effective  06-28-2024  to  12-04-2025 | RUCCSAMT*q, ruc, i* = (-1) \* Max [(RUCSFRS*q, ruc, i* \* RUCMWAMTRUCTOT*ruc, h*), (2 \* RUCSF*q, ruc, i* \* RUCMWAMTRUCTOT*ruc, h* / RUCCAPTOT*ruc, h*)] / 4  Where:  RUCCAPTOT *ruc, h* =  (RUCHSL*q, r, sp, ruc, h* – RUCHSL*q, beforeCCGR, sp, ruc, h*)  The calculation for RUCMWAMTRUCTOT is described in the RUCMWAMT section.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (6) The RUC Capacity Shortfall Ratio Share is calculated, as follows:  RUCSFRS*q, ruc, i* = RUCSF*q, ruc, i* / RUCSFTOT *ruc, i*  Where:  RUCSFTOT *ruc, i* = RUCSF *q, ruc, i*  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (7) RUC Shortfall is calculated as follows:  RUCSF *q, ruc, i* = Max (0, Max (RUCSFSNAP *q, ruc, i*, RUCSFADJ *q, ruc, i*) – RUCCAPCREDIT*q,i,z*)  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (8) RUC Shortfall at the RUC Snapshot is calculated as follows:  RUCSFSNAP *q, ruc, i* = Max (0, (( RTAML *q, p, i* \* 4) – RUCCAPSNAP *q, ruc, i*))  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  (9) RUC Capacity at the RUC Snapshot is calculated as follows:  RUCCAPSNAP *q, ruc, i* =  HASLSNAP *q, r, p, ruc, h* + (RUCCPSNAP *q, ruc, h* –RUCCSSNAP *q, ruc, h*) + ( DAEP *q, p, h* –  DAES *q, p, h*) + ( RTQQEPSNAP *q, p, ruc, i* –  RTQQESSNAP *q, p, ruc, i*) +  DCIMPSNAP *q, p, ruc, i*  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (10) RUC Shortfall at the End of the Adjustment Period, but including capacity from IRRs at the RUC Snapshot is calculated as follows:  RUCSFADJ *q, ruc, i* = Max (0, (( RTAML *q, p, i* \* 4) – (HASLSNAP *q, r, p, ruc, h* + RUCCAPADJ *q, i*))  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (11) RUC Capacity at the End of the Adjustment Period, excluding capacity from IRRs, is calculated as follows:  RUCCAPADJ *q, i* = HASLADJ *q, r, p, h* + (RUCCPADJ *q, h* – RUCCSADJ *q, h*) + ( DAEP *q, p, h* –  DAES *q, p, h* ) + ( RTQQEPADJ *q, p, I* –  RTQQESADJ *q, p, i*) +  DCIMPADJ *q, p, i*  Where,  The HASL for a Resource is counted in the above calculations when:   * The Resource is QSE-committed in their COP (STATUSADJ = 1, STATUSSNAP = 1) * The Resource planning to operate as a QSGR in their COP (OFFQSADJ = 1, OFFQSSNAP = 1) * The Resource is the Combined Cycle Configuration that was QSE-Committed at the time a RUCAC was issued (RUCAC = 1).   And where,  In calculating the amount short for each QSE, the available capacity of an IRR when determining responsibility for the corresponding RUC charges shall be the lesser of the HSL value as reflected in the COP and the Wind-powered Generation Resource Production Potential (WGRPP), as described in Section 4.2.2, Wind-Powered Generation Resource Production Potential, for a Wind-powered Generation Resource (WGR), or the PhotoVoltaic Generation Resource Production Potential (PVGRPP), as described in Section 4.2.3, PhotoVoltaic Generation Resource Production Potential, for a PhotoVoltaic Generation Resource (PVGR), at the time of RUC execution. For an IRR, the HASLSNAP variable used shall be equal to the minimum of the WGRPP or PVGRPP described above and the HSL value as reflected in the QSE’s COP, at the time of the RUC execution.  In calculating the amount short for each QSE, the QSE must be given a capacity credit for non-Intermittent Renewable Resources (IRRs) that were given notice of decommitment within the two hours before the Operating Hour as a result of the RUC process by setting the HASLSNAP and HASLADJ variables used equal to the HASLSNAP value for the Resource immediately before the decommitment instruction was given.  In calculating the short amount for each QSE, if the High Ancillary Service Limit (HASL) for a Resource was credited to the QSE during the RUC snapshot but the Resource experiences a Forced Outage within two hours before the start of the Settlement Interval, then the HASL for that Resource is also credited to the QSE in the HASLADJ.  In calculating the short amount for each QSE, if the DCIMPSNAP was credited to the QSE during the RUC snapshot but the entire Direct Current Tie (DC Tie) experiences a Forced Outage within two hours before the start of the Settlement Interval, then the DCIMPSNAP is also credited to the QSE in the DCIMPADJ.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ RUC Capacity Credit is calculated as follows:  RUCCAPCREDIT *q, ruc, i* = Min [RUCSF *q, ruc, i*, (RUCCAPTOT *ruc, h*\* RUCSFRS *q, ruc, i*)]  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate RUCCSAMTQSETOT for each QSE by aggregating all RUCCSAMT calculated for the QSE for all RUC Processes of the Operating Day, for each 15-minute interval of the Operating Day:  RUCCSAMTQSETOT *q, i*= RUCCSAMT *q, ruc, i*  Calculate RUCCSAMTTOT for the Operating Day by aggregating all RUCCSAMTQSETOT, for each 15-minute interval of the Operating Day:  RUCCSAMTTOT *i* =  RUCCSAMTQSETOT *q, i* | 5.7.4.1  5.7.4.1.1  5.7.4.1.2 | Input:  RUCMWAMTRUCTOT  RUC  RUCAC  RUCHSL  TOFO  DCFO  RUCD  HSL  WGRPP  PVGRPP  STATUSADJ  STATUSSNAP  OFFQSADJ  OFFQSSNAP  DAEP  DAES  RUCCSSNAP  RUCCPSNAP  RTQQESSNAP  RTQQEPSNAP  RUCCPADJ  RUCCSADJ  RTQQEPADJ  RTQQESADJ  DCIMPADJ  DCIMPSNAP  RTAML  Intermediate:  HASLSNAP  HASLADJ  RUCCAPTOT  RUCSFRS  RUCSFTOT  RUCSF  RUCSFSNAP  RUCCAPSNAP  RUCSFADJ  RUCCAPADJ  RUCCAPCREDIT  Output:  RUCCSAMT  RUCCSAMTQSETOT  RUCCSAMTTOT |
| RUC Capacity-Short Charge (RUCCSAMT) | Effective  12-05-2025  to  Present | RUCCSAMT*q, ruc, i* = (-1) \* Max [(RUCSFRS*q, ruc, i* \* RUCMWAMTRUCTOT*ruc, h*), (2 \* RUCSF*q, ruc, i* \* RUCMWAMTRUCTOT*ruc, h* / RUCCAPTOT*ruc, h*)] / 4  Where:  RUCCAPTOT *ruc, h* =  (RUCHSL*q, r, sp, ruc, h* – RUCHSL*q, beforeCCGR, sp, ruc, h*)  The calculation for RUCMWAMTRUCTOT is described in the RUCMWAMT section.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (8) The RUC Capacity Shortfall Ratio Share is calculated, as follows:  RUCSFRS*q, ruc, i* = RUCSF*q, ruc, i* / RUCSFTOT *ruc, i*  Where:  RUCSFTOT *ruc, i* = RUCSF *q, ruc, i*  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (9) RUC Shortfall is calculated as follows:  RUCSF *q, ruc, i* = Max (0, Max (RUCSFSNAP *q, ruc, i*, RUCSFADJ *q, ruc, i*) – RUCCAPCREDIT*q,i,z*)  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (10) RUC Shortfall at the RUC Snapshot is calculated as follows:  RUCSFSNAP *q, ruc, i* = Max (0, RUCOSFSNAP *q, ruc, i* – RUCCAPSNAP *q, ruc, i*)  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (11) RUC Overall Shortfall at the RUC Snapshot is calculated as follows:  RUCOSFSNAP *q, ruc, i* = Max (0, (( RTAML *q, p, i* \* 4) + ASONPOSSNAP *q, ruc, i* – RUCCAPSNAP *q, ruc, i*))  Ancillary Service On-Line Position at the RUC Snapshot is calculated as follows:  ASONPOSSNAP *q, ruc, i* = RUPOSSNAP *q, ruc, h* + RRPOSSNAP *q, ruc, h* + ECRPOSSNAP *q, ruc, h* + Max (0, (NSPOSSNAP *q, ruc, h* –  ASOFFOFRSNAP *q, r, ruc, h*))  RUC Capacity at the RUC Snapshot is calculated as follows:  RUCCAPSNAP *q, ruc, i* =  RCAPSNAP *q, r, p, ruc, h* + (RUCCPSNAP *q, ruc, h* – RUCCSSNAP *q, ruc, h*) + ( DAEP *q, p, h* –  DAES *q, p, h*) + ( RTQQEPSNAP *q, p, ruc, i* –  RTQQESSNAP *q, p, ruc, i*) +  DCIMPSNAP *q, p, ruc, i* +  ASOFRLRSNAP *q, r, ruc, h* + ESRMWSNAP *q, ruc, h* + ESRASSNAP *q, ruc, h*  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (12) RUC Ancillary Service Shortfall at the RUC Snapshot is calculated as follows:  RUCASFSNAP *q, ruc, i* = RUPOSSNAP *q, ruc, h* + RDPOSSNAP *q, ruc, h* + RRPOSSNAP *q, ruc, h* + ECRPOSSNAP *q, ruc, h* + NSPOSSNAP *q, ruc, h* – ASMWCAPUQSNAP *q, ruc, h*  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  (13) RUC Shortfall at the End of the Adjustment Period is calculated as follows:  RUCSFADJ *q, ruc, i* = Max (0, RUCOSFADJ *q, ruc, i* – RUCCAPADJ *q, i*)  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (14) RUC Overall Shortfall at the End of the Adjustment Period, but including capacity from IRRs at the RUC Snapshot is calculated as follows:  RUCOSFADJ *q, ruc, i* = Max (0, (( RTAML *q, p, i* \* 4) + ASONPOSADJ *q, i* – (RCAPSNAP *q, r, p, ruc, h* + RUCCAPADJ *q, i*)))  Ancillary Service On-Line Position at the End of the Adjustment Period is calculated as follows:  ASONPOSADJ *q, i* = RUPOSADJ *q, h* + RRPOSADJ *q, h* + ECRPOSADJ *q, h* + Max (0, (NSPOSADJ *q, h* –  ASOFFOFRADJ *q, r, h*))  RUC Capacity at the End of the Adjustment Period, excluding capacity from IRRs, is calculated as follows:  RUCCAPADJ *q, i* =  RCAPADJ *q, r, p, h* + (RUCCPADJ *q, h* – RUCCSADJ *q, h*) + ( DAEP *q, p, h* –  DAES *q, p, h*) + ( RTQQEPADJ *q, p, i* –  RTQQESADJ *q, p, i*) +  DCIMPADJ *q, p, i* +  ASOFRLRADJ *q, r, h* + ESRMWADJ *q, h* + ESRASADJ *q, h*  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (15) RUC Ancillary Service Shortfall at the End of the Adjustment Period is calculated as follows:  RUCASFADJ *q, i* = RUPOSADJ *q, h* + RDPOSADJ *q, h* + RRPOSADJ *q, h* + ECRPOSADJ *q, h* + NSPOSADJ *q, h* – ASMWCAPUQADJ *q, h*  Where,  The RCAP for a Resource is counted in the above calculations when:   * The Resource is QSE-committed in their COP (STATUSADJ = 1, STATUSSNAP = 1) * The Resource planning to operate as a QSGR in their COP (OFFQSADJ = 1, OFFQSSNAP = 1) * The Resource is the Combined Cycle Configuration that was QSE-Committed at the time a RUCAC was issued (RUCAC = 1).   And where,  In calculating the amount short for each QSE, the available capacity of an IRR when determining responsibility for the corresponding RUC charges shall be the lesser of the HSL value, as reflected in the COP, and the Wind-powered Generation Resource Production Potential (WGRPP), as described in Section 4.2.2, Wind-Powered Generation Resource Production Potential, for a Wind-powered Generation Resource (WGR), or the PhotoVoltaic Generation Resource Production Potential (PVGRPP), as described in Section 4.2.3, PhotoVoltaic Generation Resource Production Potential, for a PhotoVoltaic Generation Resource (PVGR), at the time of RUC execution. For an IRR, the RCAPSNAP variable used shall be equal to the minimum of the WGRPP or PVGRPP described above and the HSL value as reflected in the QSE’s COP, at the time of the RUC execution.  In calculating the amount short for each QSE, the QSE must be given a capacity credit for non-Intermittent Renewable Resources (IRRs) that were given notice of decommitment within the two hours before the Operating Hour as a result of the RUC process by setting the RCAPSNAP and RCAPADJ variables used set equal to the RCAPSNAP value for the Resource immediately before the decommitment instruction was given.  In calculating the short amount for each QSE, if the RCAPSNAP for a non-IRR was credited to the QSE during the RUC Snapshot but the Resource experiences a Forced Outage within two hours before the start of the Settlement Interval, then the RCAPSNAP for that Resource is also credited to the QSE in the RCAPADJ.  In calculating the short amount for each QSE, if the DCIMPSNAP was credited to the QSE during the RUC Snapshot but the entire Direct Current Tie (DC Tie) experiences a Forced Outage within two hours before the start of the Settlement Interval, then the DCIMPSNAP is also credited to the QSE in the DCIMPADJ.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ RUC Capacity Credit is calculated as follows:  RUCCAPCREDIT *q, ruc, i* = Min [RUCSF *q, ruc, i*, (RUCCAPTOT *ruc, h*\* RUCSFRS *q, ruc, i*)]  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate RUCCSAMTQSETOT for each QSE by aggregating all RUCCSAMT calculated for the QSE for all RUC Processes of the Operating Day, for each 15-minute interval of the Operating Day:  RUCCSAMTQSETOT *q, i*= RUCCSAMT *q, ruc, i*  Calculate RUCCSAMTTOT for the Operating Day by aggregating all RUCCSAMTQSETOT, for each 15-minute interval of the Operating Day:  RUCCSAMTTOT *i* =  RUCCSAMTQSETOT *q, i* | 5.7.4.1  5.7.4.1.1  5.7.4.1.2 | Input:  RUCMWAMTRUCTOT  RUC  RUCAC  RUCHSL  TOFO  DCFO  RUCD  HSL  WGRPP  PVGRPP  STATUSADJ  STATUSSNAP  OFFQSADJ  OFFQSSNAP  DAEP  DAES  RUCCPSNAP  RUCCPADJ  RUCCSSNAP  RUCCSADJ  RTQQEPSNAP  RTQQEPADJ  RTQQESSNAP  RTQQESADJ  DCIMPADJ  DCIMPSNAP  ASOFRLRSNAP  ASOFRLRADJ  ESRMWSNAP  ESRMWADJ  ESRASSNAP  ESRASADJ  RTAML  RUPOSSNAP  RUPOSADJ  RDPOSSNAP  RDPOSADJ  RRPOSSNAP  RRPOSADJ  NSPOSSNAP  NSPOSADJ  ECRPOSSNAP  ECRPOSADJ  ASOFFOFRSNAP  ASOFFOFRADJ  ASMWCAPUQSNAP  ASMWCAPUQADJ  Intermediate:  RCAPSNAP  RCAPADJ  RUCCAPSNAP  RUCCAPADJ  ASONPOSSNAP  ASONPOSADJ  RUCOSFSNAP  RUCOSFADJ  RUCASFSNAP  RUCASFADJ  RUCSFSNAP  RUCSFADJ  RUCSF  RUCSFTOT  RUCSFRS  RUCCAPCREDIT  RUCCAPTOT  Output:  RUCCSAMT  RUCCSAMTQSETOT  RUCCSAMTTOT |
| RUC Make Whole Uplift Charge (LARUCAMT) | Effective  12-01-2010  to  Present | LARUCAMT *q, i* = (-1) \* (RUCMWAMTTOT h / 4 + RUCCSAMTTOT *i*) \* LRS *q, i*  The calculation for RUCMWAMTTOT is described in the RUCMWAMT section.  The calculation for RUCCSAMTTOT is described in the RUCCSAMT section. | 5.7.4.2 | Input:  RUCMWAMTTOT  RUCCSAMTTOT  LRS  Output:  LARUCAMT |
| RUC Clawback Payment (LARUCCBAMT) | Effective  12-01-2010  to  Present | LARUCCBAMT *q, i* = (-1) \* (RUCCBAMTTOT h / 4 \* LRS *q, i* )  The calculation for RUCCBAMTTOT is described in the RUCCBAMT section. | 5.7.5 | Input:  RUCCBAMTTOT  LRS  Output:  LARUCCBAMT |
| RUC Decommitment Charge (LARUCDCAMT) | Effective  12-01-2010  to  Present | **LARUCDCAMT** *q, i* = (-1) **\* [(RUCDCAMTTOT** h **/ 4 ) \* LRS** *q, i* ]  The calculation for RUCDCAMTTOT is described in the RUCDCAMT section. | 5.7.6 | Input:  RUCDCAMTTOT  LRS  Output:  LARUCDCAMT |
| Real-Time Energy Imbalance Amount at a Resource Node (RTEIAMT) | Effective  04-02-2021  to  Present | RTEIAMT *q, p* = (-1) \* {((RESREV*q, r, gsc, p*) + (WSLAMTTOT*q, r, p*) + (ESRNWSLAMTTOT*q, r, p*) + RTSPP *p* \* [(SSSK *q, p* \* ¼) + (DAEP *q, p* \* ¼) + (RTQQEP *q, p* \* ¼) – (SSSR *q, p* \* ¼) – (DAES *q, p* \* ¼) – (RTQQES *q, p* \* ¼)]}  RNIMBAL *q, p* = (RESMEB *q, r, gsc, p*) + WSLTOT*q, p* + ESRNWSLTOT*q, p* + (SSSK *q, p* \* ¼) + (DAEP *q, p* \* ¼) + (RTQQEP *q, p* \* ¼) – (SSSR *q, p* \* ¼) – (DAES *q, p* \* ¼) – (RTQQES *q, p* \* ¼)  Where:  WSLAMTTOT *q, r, p* = (RTRMPRESR*b* \* MEBL *q, r, b*)  ESRNWSLAMTTOT *q, r, p* = (RTRMPRESR*b* \* MEBR *q, r, b*)  RESREV *q, r, gsc, p* = GSPLITPER *q, r, gsc, p* \* NMSAMTTOT *gsc*  RESMEB *q, r, gsc, p* = GSPLITPER *q, r, gsc, p* \* NMRTETOT *gsc*  Where:  If NMRTETOT*gsc* > 0 then:  NMSAMTTOTgsc= [(RTRMPR *b* \* MEB *gsc,b*) + (RTRMPR *b* \* MEBC *gsc,b*)]  Otherwise, If NMRTETOT*gsc* = 0 then:  NMSAMTTOTgsc = 0  Note: If NMRTETOT is not greater than zero then the Load is included in the Real-Time Adjusted Metered Load (RTAML) and will be calculated instead in the Real-Time Energy Imbalance Payment or Charge at a Load Zone.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate RTEIAMTQSETOT for each QSE by aggregating all RTEIAMT calculated for the QSE and all Settlement Points, for each 15-minute Settlement Interval of the Operating Day:  RTEIAMTQSETOT *q*=  RTEIAMT *q, p*  Calculate RTEIAMTTOT for the Operating Day by aggregating all RTEIAMTQSETOT, for each 15-minute Settlement Interval of the Operating Day:  RTEIAMTTOT = RTEIAMTQSETOT *q* | 6.6.3.1  6.6.10 | Input:  GSPLITPER RTSPP  RTRMPR  RTRMPRESR  SSSK DAEP RTQQEP SSSR DAES RTQQES  NMRTETOT  MEB  MEBL  MEBC  MEBR  WSLTOT  ESRNWSLTOT  Intermediate:  NMSAMTTOT  WSLAMTTOT  ESRNWSLAMTTOT  RESREV  RESMEB  Output:  RTEIAMT  RTEIAMTQSETOT  RTEIAMTTOT  RNIMBAL |
| Real-Time Energy Imbalance Amount at a Load Zone (RTEIAMT) | Effective  02-11-2022  to  present | RTEIAMT *q, p* = (-1) \* {[RTSPP *p* \* [(SSSK *q, p* \* ¼) + (DAEP *q, p* \* ¼) + (RTQQEP *q, p* \* ¼) – (SSSR *q, p* \* ¼) – (DAES *q, p* \* ¼) – (RTQQES *q, p* \* ¼)]] + [RTSPPEW*p* \* (RTMGSOGZ *q, p* – (RTAML *q, p* - RTAMLESRNW *q, p*))]}  LZIMBAL *q, p*= (SSSK *q, p*\* ¼) + (DAEP *q, p*\* ¼) + (RTQQEP *q, p*\* ¼) – (SSSR *q, p*\* ¼) – (DAES *q, p*\* ¼) – (RTQQES *q, p*\* ¼) – (RTAML *q, p*– RTAMLESRNW *q, p*) + RTMGSOGZ *q, p*  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate RTEIAMTQSETOT for each QSE by aggregating all RTEIAMT calculated for the QSE and all Settlement Points, for each 15-minute Settlement Interval of the Operating Day:  RTEIAMTQSETOT *q*=  RTEIAMT *q, p*  Calculate RTEIAMTTOT for the Operating Day by aggregating all RTEIAMTQSETOT, for each 15-minute Settlement Interval of the Operating Day:  RTEIAMTTOT = RTEIAMTQSETOT *q* | 6.6.3.2  6.6.10 | Input:  RTSPP  RTSPPEW SSSK  DAEP  RTQQEP  SSSR  DAES  RTQQES  RTMGSOGZ  RTAML  RTAMLESRNW  Ouput:  RTEIAMT  RTEIAMTQSETOT  RTEIAMTTOT  LZIMBAL |
| Real-Time Energy Imbalance Amount at a Hub  (RTEIAMT) | Effective  04-12-2016  to  Present | RTEIAMT *q, p* = (-1) \* RTSPP *p* \* {(SSSK *q, p* \* ¼) + (DAEP *q, p* \* ¼) + (RTQQEP *q, p* \* ¼) – (SSSR *q, p* \* ¼) – (DAES *q, p* \* ¼) – (RTQQES *q, p* \* ¼)}  HBIMBAL q, p = (SSSK q, p \* ¼) + (DAEP q, p \* ¼) + (RTQQEP q, p \* ¼) – (SSSR q, p \* ¼) – (DAES q, p \* ¼) – (RTQQES q, p \* ¼)  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate RTEIAMTQSETOT for each QSE by aggregating all RTEIAMT calculated for the QSE and all Settlement Points, for each 15-minute Settlement Interval of the Operating Day:  RTEIAMTQSETOT *q*=  RTEIAMT *q, p*  Calculate RTEIAMTTOT for the Operating Day by aggregating all RTEIAMTQSETOT, for each 15-minute Settlement Interval of the Operating Day:  RTEIAMTTOT = RTEIAMTQSETOT *q* | 6.6.3.3  6.6.10 | Input:  RTSPP  SSSK  DAEP RTQQEP  SSSR  DAES  RTQQES  Output:  RTEIAMT  RTEIAMTQSETOT  RTEIAMTTOT  HBIMBAL |
| Real-Time Energy Payment for a DC Tie Import  (RTDCIMPAMT) | Effective  12-01-2010  to  Present | The payment to each QSE for energy imported into the ERCOT System through a DC Tie is calculated as follows:  RTDCIMPAMT *q, p* = (-1) \* RTSPP *p* \* (RTDCIMP *q, p* \* ¼)  The payment to each QSE for energy imported into the ERCOT System during a declared Emergency Condition through a DC Tie in response to an ERCOT Dispatch Instruction is calculated as follows:  RTEDCIMPAMT *q, p* = (-1) \* Max {RTSPP *p*, (VEEPDCTP *q, p* \* CAEDCT)} \* (RTEDCIMP *q, p* \* ¼)  Where:  *p* is a DC Tie Settlement Point  CAEDCT = 1.10  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate RTDCIMPAMTQSETOT for each QSE by aggregating all RTDCIMPAMT and RTEDCIMPAMT calculated for the QSE and Settlement Point, for each 15-minute Settlement Interval of the Operating Day:  RTDCIMPAMTQSETOT *q*=  (RTDCIMPAMT *q, p* + RTEDCIMPAMT *q, p*)  Calculate RTDCIMPAMTTOT for the Operating Day by aggregating all RTDCIMPAMTQSETOT, for each 15-minute Settlement Interval of the Operating Day:  RTDCIMPAMTTOT = RTDCIMPAMTQSETOT *q* | 6.6.3.4  6.6.10 | Input:  RTSPP  RTDCIMP  RTEDCIMP  VEEPDCTP  CAEDCT  Output:  RTDCIMPAMT  RTEDCIMPAMT RTDCIMPAMTQSETOT  RTDCIMPAMTTOT |
| Block Load Transfer Resource Amount  (BLTRAMT) | Effective  02-24-2012  to  Present | BLTRAMT *q, bltp, p* = (-1) \* Max {RTSPPEW *p*, (VEEPBLTP *q, bltp* \* CABLT)} \* BLTR *q, bltp, p*  Where:  *bltp* is a BLT Point  *p* is a Load Zone Settlement Point  CABLT = 1.10  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate BLTRAMTQSETOT for each QSE by aggregating all BLTRAMT calculated for the QSE and BLT points, for each 15-minute Settlement Interval of the Operating Day:  BLTRAMTQSETOT *q*= ( BLTRAMT *q, bltp, p*)  Calculate BLTRAMTTOT for the Operating Day by aggregating all BLTRAMTQSETOT, for each 15-minute Settlement Interval of the Operating Day:  BLTRAMTTOT = BLTRAMTQSETOT *q* | 6.6.3.5  6.6.10 | Input:  RTSPPEW  BLTR  VEEPBLTP  CABLT  Output:  BLTRAMT  BLTRAMTQSETOT  BLTRAMTTOT |
| Monthly Block Load Transfer Amount--Presidio Exception (MBLTAMT) | Effective  12-01-2010  to  Present | MBLTAMT *q, p* = (-1) \* VMEBLTP *q, p* \* CABLT  Where:  *p* is a Load Zone Settlement Point  CABLT = 1.10  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate MBLTAMTQSETOT for each QSE by aggregating all MBLTAMT calculated for the QSE and BLT points, for each 15-minute Settlement Interval of the Operating Day:  MBLTAMTQSETOT *q*=  ( MBLTAMT *q, p*)  Calculate MBLTAMTTOT for the Operating Day by aggregating all MBLTAMTQSETOT, for each 15-minute Settlement Interval of the Operating Day:  MBLTAMTTOT = MBLTAMTQSETOT *q* | 6.6.3.5 | Input:  VMEBLTP  CABLT  Output:  MBLTAMT  MBLTAMTQSETOT  MBLTAMTTOT |
| Load-Allocated Monthly BLT Amount--Presidio Exception (LAMBLTAMT) | Effective  12-01-2010  to  Present | **LAMBLTAMT *q* = (-1) \* MLRS *q* \* MBLTAMTTOT**  The calculation for MBLTAMTTOT is described in the MBLTAMT section. | 6.6.3.5 | Input:  MLRS  MBLTAMTTOT  Output:  LAMBLTAMT |
| High Dispatch Limit Override Energy Payment  (HDLOEAMT) | Effective  04-02-2021  to  12-04-2025 | HDLOEAMT *q, r, p, i* = (-1) \* Min {HDLOAL *q, r, p, i*, Max (0, ((RTSPP *p, i* – RTRSVPOR *i* – RTRDP *i* – RTEOCOST *q, r, p, i* ) \* HDLOQTY *q, r, p, i* ))}  Where:  HDLOQTY *q, r, p, i* = Max (0, (¼ (HDLOBRKP *q, r, p, i* – AVGHDL *q, r, p, i*)))  HDLOBRKP *q, r, p, i* = Min (AVGHASL *q, r, p, i*, HDLOBRKPCP *q, r, p, i*)  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate HDLOEAMTQSETOT for each QSE by aggregating all HDLOEAMT calculated for the QSE and Resource, for each 15-minute Settlement Interval of the Operating Day:  HDLOEAMTQSETOT *q, i*=  HDLOEAMT *q, r, p, i*  Calculate HDLOEAMTTOT for the Operating Day by aggregating all HDLOEAMTQSETOT, for each 15-minute Settlement Interval of the Operating Day:  HDLOEAMTTOT *i* = HDLOEAMTQSETOT *q, i* | 6.6.3.6  6.6.3.7 | Input:  HDLOAL  RTSPP  RTRSVPOR  RTRDP  RTEOCOST  HDLOBRKPCP  AVGHDL  AVGHASL  Intermediate:  HDLOBRKP  HDLOQTY  Output:  HDLOEAMT  HDLOEAMTQSETOT  HDLOEAMTTOT |
| High Dispatch Limit Override Energy Payment  (HDLOEAMT) | Effective  12-05-2025  to  Present | HDLOEAMT *q, r, p, i* = (-1) \* Min {HDLOAL *q, r, p, i*, Max (0, ((RTSPP *p, i* – RTRDP *i* – RTEOCOST *q, r, p, i* ) \* HDLOQTY *q, r, p, i* ))}  Where:  HDLOQTY *q, r, p, i* = Max (0, (¼ (HDLOBRKP *q, r, p, i* – AVGHDL *q, r, p, i*)))  HDLOBRKP *q, r, p, i* = Min (AVGHSL *q, r, p, i*, HDLOBRKPCP *q, r, p, i*)  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate HDLOEAMTQSETOT for each QSE by aggregating all HDLOEAMT calculated for the QSE and Resource, for each 15-minute Settlement Interval of the Operating Day:  HDLOEAMTQSETOT *q, i*=  HDLOEAMT *q, r, p, i*  Calculate HDLOEAMTTOT for the Operating Day by aggregating all HDLOEAMTQSETOT, for each 15-minute Settlement Interval of the Operating Day:  HDLOEAMTTOT *i* = HDLOEAMTQSETOT *q, i* | 6.6.3.6  6.6.3.7 | Input:  HDLOAL  RTSPP  RTRDP  RTEOCOST  HDLOBRKPCP  AVGHDL  AVGHSL  Intermediate:  HDLOBRKP  HDLOQTY  Output:  HDLOEAMT  HDLOEAMTQSETOT  HDLOEAMTTOT |
| Load-Allocated High Dispatch Limit Override Energy Charge (LAHDLOEAMT) | Effective  03-09-2017  to  Present | **LAHDLOEAMT *q, i* = (-1) \* HDLOEAMTTOT \* LRS *q, i***  The calculation for HDLOEAMTTOT is described in the HDLOEAMT section. | 6.6.3.7 | Input:  HDLOEAMTTOT  LRS  Output:  LAHDLOEAMT |
| Real-Time Energy for a Settlement Only Generator (RTESOGSAMT) | Effective  02-11-2022  to  Present | If MEBSOGNET*q, gsc, i* > 0, then  RTESOGSAMT *q, gsc, i* = (-1) \* [(RTESOGPR*b, i* \* MEBSOG *q, gsc, b, i*)]  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate RTESOGAMTQSETOT for each QSE by aggregating all RTESOGSAMT calculated for the QSE and Settlement Only Generator, for each 15-minute Settlement Interval of the Operating Day:  RTESOGAMTQSETOT *q, i*= RTESOGSAMT *q, gsc, i*  Calculate RTESOGAMTTOT for the Operating Day by aggregating all RTESOGAMTQSETOT, for each 15-minute Settlement Interval of the Operating Day:  RTESOGAMTTOT *i* = RTESOGAMTQSETOT *q, i* | 6.6.3.8  6.6.10 | Input:  MEBSOGNET  RTESOGPR  MEBSOG  Output:  RTESOGSAMT  RTESOGAMTQSETOT  RTESOGAMTTOT |
| Real-Time Congestion Payment or Charge for Self-Schedules (RTCCAMT) | Effective  12-01-2010  to  Present | RTCCAMT *q, s* = (RTSPP *sink, s* – RTSPP *source, s*) \* (SSQ *q, s* \* ¼)  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate RTCCAMTQSETOT for each QSE by aggregating all RTCCAMT calculated for the QSE for all its Self-Schedules, for each 15-minute Settlement Interval of the Operating Day:  RTCCAMTQSETOT *q*= RTCCAMT *q, gsc*  Calculate RTCCAMTTOT for the Operating Day by aggregating all RTCCAMTQSETOT, for each 15-minute Settlement Interval of the Operating Day:  RTCCAMTTOT = RTCCAMTQSETOT *q* | 6.6.4 | Input:  RTSPP  SSQ  Output:  RTCCAMT  RTCCAMTQSETOT  RTCCAMTTOT |
| Non-IRR Generation Resource Base-Point Deviation Charge for Over Generation  (BPDAMT) | Effective  06-10-2023  to  12-04-2025 | Non-IRR Generation Resource Base Point Deviation Charge for Over Generation will not be calculated if any of the following are true:   * RRSFLAG = 1 * ECRSFLAG = 1 * FQDEVFLAG = 3 * Resource is RMR * QSFLAG = 1 * STATUSONTEST = 1 * SUSDFLAG = 1 (If the STATUSSTARTUP = 1 or AABP is less than AVGTLSL for the 15-minute Settlement Interval.) * Resource is a Qualifying Facility & EOCQFFLAG = 0 * FQDEVFLAG = 2 and deviation helps restore frequency * The Resource is Dynamically Scheduled and online (ONDSRFLAG = 1) unless it has been dispatched for an entire 15-minute Settlement Interval to a base-point other than its output schedule (DSRFLAG = 1) for more than 4 consecutive entire 15-minute Settlement Intervals (only the first 4 consecutive 15-minute Settlement Intervals shall be exempted so in other words, if ONDSRFLAG is equal to one (1) and no DSRFLAG exists or is equal to zero (0) for the 15-minute Settlement Interval the Resource is exempt but if both ONDSRFLAG and DSRFLAG equal one (1) for five (5) or more consecutive 15-minute Settlement Intervals the Resource is exempt in the first 4 consecutive 15-minute Settlement Intervals but can be charged base-point deviation for the remaining consecutive 15-minute Settlement Intervals.   Otherwise,  BPDAMT *q, r, p* = [Max (PR1, RTSPP *p*) \* OGEN *q, r, p* + ADJBPD *q, r, p*  Where:  OGEN *q, r, p* = Max [0, (TWTG *q, r, p* - (1/4 \* Max (((1 + K1) \* AABP *q, r, p*), (AABP *q, r, p* + Q1)))]]  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate BPDAMTQSETOT for each QSE by aggregating all BPDAMT calculated for the QSE for all its Resources, for each 15-minute Settlement Interval of the Operating Day:  **BPDAMTQSETOT *q* = BPDAMT *q, r, p***  Calculate BPDAMTTOT for the Operating Day by aggregating all BPDAMTQSETOT, for each 15-minute Settlement Interval of the Operating Day:  BPDAMTTOT = BPDAMTQSETOT *q* | 6.6.5.1  6.6.5.1.1  6.6.5.1.1.1  6.6.5.3 | Input:  RRSFLAG  ECRSFLAG  FQDEVFLAG  QSFLAG  STATUSONTEST  SUSDFLAG  STATUSSTARTUP  EOCQFFLAG  DSRFLAG  ONDSRFLAG  AVGTLSL  PR1  K1  Q1  RTSPP  AABP  TWTG  ADJBPD  Intermediate:  OGEN  Output:  BPDAMT  BPDAMTQSETOT  BPDAMTTOT |
| Non-IRR Generation Resource Set-Point Deviation Charge for Over Generation  (SPDAMT) | Effective  12-05-2025  to  Present | Non-IRR Generation Resource Set Point Deviation Charge for Over Generation will not be calculated if any of the following are true:   * RRSFLAG = 1 * ECRSFLAG = 1 * FQDEVFLAG = 3 * Resource is RMR * QSFLAG = 1 * STATUSONTEST = 1 * SUSDFLAG = 1 (If the STATUSSTARTUP = 1 or AASP is less than AVGTLSL for the 15-minute Settlement Interval.) * Resource is a Qualifying Facility & EOCQFFLAG = 0 * FQDEVFLAG = 2 and deviation helps restore frequency * SPDEXEMPTFLAG = 1   Otherwise,  SPDAMT *q, r, p* = [Max (PR1, RTSPP *p*) \* OGEN *q, r, p* + ADJSPD *q, r, p*  Where:  OGEN *q, r, p* = Max [0, (TWTG *q, r, p* – 1/4 \* Max (((1 + K1) \* AASP *q, r, p*), (AASP *q, r, p* + Q1)))]  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate SPDAMTQSETOT for each QSE by aggregating all SPDAMT calculated for the QSE for all its Resources, for each 15-minute Settlement Interval of the Operating Day:  **SPDAMTQSETOT *q* = SPDAMT *q, r, p***  Calculate SPDAMTTOT for the Operating Day by aggregating all SPDAMTQSETOT for each 15-minute Settlement Interval of the Operating Day:  SPDAMTTOT = SPDAMTQSETOT *q* | 6.6.5.1  6.6.5.2  6.6.5.6 | Input:  RRSFLAG  ECRSFLAG  FQDEVFLAG  SPDEXEMPTFLAG  QSFLAG  STATUSONTEST  SUSDFLAG  STATUSSTARTUP  EOCQFFLAG  AVGTLSL  PR1  K1  Q1  RTSPP  AASP  TWTG  ADJSPD  Intermediate:  OGEN  Output:  SPDAMT  SPDAMTQSETOT  SPDAMTTOT |
| Non-IRR Generation Resource Base-Point Deviation Charge for Under Generation  (BPDAMT) | Effective  06-10-2023  to  12-04-2025 | Non-IRR Generation Resource Base Point Deviation Charge for Under Generation will not be calculated if any of the following are true:   * RRSFLAG = 1 * ECRSFLAG = 1 * FQDEVFLAG = 3 * Resource is RMR * QSFLAG = 1 * STATUSONTEST = 1 * SUSDFLAG = 1 (If the STATUSSTARTUP = 1 or AABP is less than AVGTLSL for the 15-minute Settlement Interval.) * Resource is a Qualifying Facility & EOCQFFLAG = 0 * FQDEVFLAG = 1 and deviation helps restore frequency * The Resource is Dynamically Scheduled and online (ONDSRFLAG = 1) unless it has been dispatched for an entire 15-minute Settlement Interval to a base-point other than its output schedule (DSRFLAG = 1) for more than 4 consecutive entire 15-minute Settlement Intervals (only the first 4 consecutive 15-minute Settlement Intervals shall be exempted so in other words, if ONDSRFLAG is equal to one (1) and no DSRFLAG exists or is equal to zero (0) for the 15-minute Settlement Interval the Resource is exempt but if both ONDSRFLAG and DSRFLAG equal one (1) for five (5) or more consecutive 15-minute Settlement Intervals the Resource is exempt in the first 4 consecutive 15-minute Settlement Intervals but can be charged base-point deviation for the remaining consecutive 15-minute Settlement Intervals.   Otherwise,  BPDAMT *q, r, p* = (-1) \* Min (PR2, RTSPP *p*) \* Min (1, KP) \* UGEN *q, r, p* + ADJBPD *q, r, p*  Where:  UGEN *q, r, p* = Max [0, [Min ((1 - K2) \* ¼\* AABP *q, r, p*, ¼ \* (AABP *q, r, p* - Q2)) - TWTG*q, r, p*]]  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate BPDAMTQSETOT for each QSE by aggregating all BPDAMT calculated for the QSE for all its Resources, for each 15-minute Settlement Interval of the Operating Day:  **BPDAMTQSETOT *q* = BPDAMT *q, r, p***  Calculate BPDAMTTOT for the Operating Day by aggregating all BPDAMTQSETOT, for each 15-minute Settlement Interval of the Operating Day:  BPDAMTTOT = BPDAMTQSETOT *q* | 6.6.5.1  6.6.5.1.1  6.6.5.1.1.2  6.6.5.3 | Input:  RRSFLAG  ECRSFLAG  FQDEVFLAG  QSFLAG  STATUSONTEST  SUSDFLAG  STATUSSTARTUP  EOCQFFLAG  DSRFLAG  ONDSRFLAG  AVGTLSL  PR2  KP  K2  Q2  RTSPP  AABP  TWTG  ADJBPD  Intermediate:  UGEN  Output:  BPDAMT  BPDAMTQSETOT  BPDAMTTOT |
| Non-IRR Generation Resource Set-Point Deviation Charge for Under Generation  (SPDAMT) | Effective  12-05-2025  to  Present | Non-IRR Generation Resource Set Point Deviation Charge for Under Generation will not be calculated if any of the following are true:   * RRSFLAG = 1 * ECRSFLAG = 1 * FQDEVFLAG = 3 * Resource is RMR * QSFLAG = 1 * STATUSONTEST = 1 * SUSDFLAG = 1 (If the STATUSSTARTUP = 1 or AASP is less than AVGTLSL for the 15-minute Settlement Interval.) * Resource is a Qualifying Facility & EOCQFFLAG = 0, * FQDEVFLAG = 1 and deviation helps restore frequency, * SPDEXEMPTFLAG = 1   Otherwise,  SPDAMT *q, r, p* = (-1) \* Min (PR2, RTSPP *p*) \* Min (1, KP) \* UGEN *q, r, p* + ADJSPD *q, r, p*  Where:  UGEN *q, r, p* = Max [0, [Min ((1 - K2) \* ¼\* AASP *q, r, p*, ¼ \* (AASP *q, r, p* - Q2)) - TWTG*q, r, p*]]  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate SPDAMTQSETOT for each QSE by aggregating all SPDAMT calculated for the QSE for all its Resources, for each 15-minute Settlement Interval of the Operating Day:  **SPDAMTQSETOT *q* = SPDAMT *q, r, p***  Calculate SPDAMTTOT for the Operating Day by aggregating all SPDAMTQSETOT for each 15-minute Settlement Interval of the Operating Day:  SPDAMTTOT = SPDAMTQSETOT *q* | 6.6.5.1  6.6.5.2.1  6.6.5.6 | Input:  RRSFLAG  ECRSFLAG  FQDEVFLAG  SPDEXEMPTFLAG  QSFLAG  STATUSONTEST  SUSDFLAG  STATUSSTARTUP  EOCQFFLAG  AVGTLSL  PR2  KP  K2  Q2  RTSPP  AASP  TWTG  ADJSPD  Intermediate:  UGEN  Output:  SPDAMT  SPDAMTQSETOT  SPDAMTTOT |
| Controllable Load Resource Base-Point Deviation Charge for Over Consumption  (BPDAMT) | Effective  06-10-2023  to  12-04-2025 | Controllable Load Resource Base Point Deviation Charge for Over Consumption will not be calculated if any of the following are true:   * RRSFLAG = 1 * ECRSFLAG = 1 * FQDEVFLAG = 3 * FQDEVFLAG = 1 and deviation helps restore frequency * LROFLAG = 1 * CLRDISPFLAG = 1   Otherwise,  BPDAMT *q, r, p* = -1 \* Min (PRZ1, RTSPP *p*) \* Min (1, KP1) \* OCONSM *q, r, p* + ADJBPD *q, r, p*  Where:  If CLRASFLAG = 1 then  OCONSM *q, r, p* = Max [0,(ATPC *q, r, p* - ¼ \* Max (((1+ KLR1) \* AABP *q, r, p*), (AABP *q, r, p* + QLR1)))]  If CLRASFLAG = 0 then  OCONSM *q, r, p* = Max [0,(ATPC *q, r, p* – ¼ \* Max (((1+ KLR1\_NOAS) \* AABP *q, r, p*), (AABP *q, r, p* + QLR1)))]  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate BPDAMTQSETOT for each QSE by aggregating all BPDAMT calculated for the QSE for all its Resources, for each 15-minute Settlement Interval of the Operating Day:  **BPDAMTQSETOT *q* = BPDAMT *q, r, p***  Calculate BPDAMTTOT for the Operating Day by aggregating all BPDAMTQSETOT, for each 15-minute Settlement Interval of the Operating Day:  BPDAMTTOT = BPDAMTQSETOT *q* | 6.6.5.1  6.6.5.1.1  6.6.5.1.1.3  6.6.5.3 | Input:  RRSFLAG  ECRSFLAG  FQDEVFLAG  LROFLAG  CLRDISPFLAG  CLRASFLAG  KP1  KLR1  KLR1\_NOAS  QLR1  PRZ1  RTSPP  AABP  ATPC  ADJBPD  Intermediate:  OCONSM  Output:  BPDAMT  BPDAMTQSETOT  BPDAMTTOT |
| Controllable Load Resource Set-Point Deviation Charge for Over Consumption  (SPDAMT) | Effective  12-05-2025  to  Present | Controllable Load Resource Set Point Deviation Charge for Over Consumption will not be calculated if any of the following are true:   * RRSFLAG = 1 * ECRSFLAG = 1 * FQDEVFLAG = 3 * FQDEVFLAG = 1 and deviation helps restore frequency * LROFLAG = 1 * CLRDISPFLAG = 1 * SPDEXEMPTFLAG = 1   Otherwise,  SPDAMT *q, r, p* = -1 \* Min (PRZ1, RTSPP *p*) \* Min (1, KP1) \* OCONSM *q, r, p* + ADJSPD *q, r, p*  Where:  If CLRASFLAG = 1 then  OCONSM *q, r, p* = Max [0,(ATPC *q, r, p* - ¼ \* Max (((1+ KLR1) \* AASP *q, r, p*), (AASP *q, r, p* + QLR1)))]  If CLRASFLAG = 0 then  OCONSM *q, r, p* = Max [0,(ATPC *q, r, p* – ¼ \* Max (((1+ KLR1\_NOAS) \* AASP *q, r, p*), (AASP *q, r, p* + QLR1)))]  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate SPDAMTQSETOT for each QSE by aggregating all SPDAMT calculated for the QSE for all its Resources, for each 15-minute Settlement Interval of the Operating Day:  **SPDAMTQSETOT *q* = SPDAMT *q, r, p***  Calculate SPDAMTTOT for the Operating Day by aggregating all SPDAMTQSETOT for each 15-minute Settlement Interval of the Operating Day:  SPDAMTTOT = SPDAMTQSETOT *q* | 6.6.5.1  6.6.5.3  6.6.5.6 | Input:  RRSFLAG  ECRSFLAG  FQDEVFLAG  SPDEXEMPTFLAG  LROFLAG  CLRDISPFLAG  CLRASFLAG  KP1  KLR1  KLR1\_NOAS  QLR1  PRZ1  RTSPP  AASP  ATPC  ADJSPD  Intermediate:  OCONSM  Output:  SPDAMT  SPDAMTQSETOT  SPDAMTTOT |
| Controllable Load Resource Base-Point Deviation Charge for Under Consumption  (BPDAMT) | Effective  06-10-2023  to  12-04-2025 | Controllable Load Resource Base Point Deviation Charge for Under Consumption will not be calculated if any of the following are true:   * RRSFLAG = 1 * ECRSFLAG = 1 * FQDEVFLAG = 3 * FQDEVFLAG = 2 and deviation helps restore frequency * LROFLAG = 1 * CLRDISPFLAG = 1   Otherwise,  BPDAMT *q, r, p* = Max (PRZ2, RTSPP *p*) \* UCONSM *q, r, p* + ADJBPD *q, r, p*  Where:  If CLRASFLAG = 1 then  UCONSM *q, r, p* = Max [0, [Min ((1 – KLR2) \* ¼\* AABP *q, r, p*,¼ \* (AABP *q, r, p* – QLR2)) – ATPC*q, r, p*]]  If CLRASFLAG = 0 then  UCONSM *q, r, p* = Max [0, [Min ((1 – KLR2\_NOAS) \* ¼\* AABP *q, r, p*,¼ \* (AABP *q, r, p* – QLR2)) – ATPC*q, r, p*]]  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate BPDAMTQSETOT for each QSE by aggregating all BPDAMT calculated for the QSE for all its Resources, for each 15-minute Settlement Interval of the Operating Day:  **BPDAMTQSETOT *q* = BPDAMT *q, r, p***  Calculate BPDAMTTOT for the Operating Day by aggregating all BPDAMTQSETOT, for each 15-minute Settlement Interval of the Operating Day:  BPDAMTTOT = BPDAMTQSETOT *q* | 6.6.5.1  6.6.5.1.1  6.6.5.1.1.4  6.6.5.3 | Input:  RRSFLAG  ECRSFLAG  FQDEVFLAG  LROFLAG  CLRDISPFLAG  CLRASFLAG  KLR2  KLR2\_NOAS  QLR2  PRZ2  RTSPP  AABP  ATPC  ADJBPD  Intermediate:  UCONSM    Output:  BPDAMT  BPDAMTQSETOT  BPDAMTTOT |
| Controllable Load Resource Set-Point Deviation Charge for Under Consumption  (SPDAMT) | Effective  12-05-2025  to  Present | Controllable Load Resource Set Point Deviation Charge for Under Consumption will not be calculated if any of the following are true:   * RRSFLAG = 1 * ECRSFLAG = 1 * FQDEVFLAG = 3 * FQDEVFLAG = 2 and deviation helps restore frequency * LROFLAG = 1 * CLRDISPFLAG = 1 * SPDEXEMPTFLAG = 1   Otherwise,  SPDAMT *q, r, p* = Max (PRZ2, RTSPP *p*) \* UCONSM *q, r, p* + ADJSPD *q, r, p*  Where:  If CLRASFLAG = 1 then  UCONSM *q, r, p* = Max [0, [Min ((1 – KLR2) \* ¼\* AASP *q, r, p*,¼ \* (AASP *q, r, p* – QLR2)) – ATPC*q, r, p*]]  If CLRASFLAG = 0 then  UCONSM *q, r, p* = Max [0, [Min ((1 – KLR2\_NOAS) \* ¼\* AASP *q, r, p*,¼ \* (AASP *q, r, p* – QLR2)) – ATPC*q, r, p*]]  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate SPDAMTQSETOT for each QSE by aggregating all SPDAMT calculated for the QSE for all its Resources, for each 15-minute Settlement Interval of the Operating Day:  **SPDAMTQSETOT *q* = SPDAMT *q, r, p***  Calculate SPDAMTTOT for the Operating Day by aggregating all SPDAMTQSETOT for each 15-minute Settlement Interval of the Operating Day:  SPDAMTTOT = SPDAMTQSETOT *q* | 6.6.5.1  6.6.5.3.1  6.6.5.6 | Input:  RRSFLAG  ECRSFLAG  FQDEVFLAG  SPDEXEMPTFLAG  LROFLAG  CLRDISPFLAG  CLRASFLAG  KLR2  KLR2\_NOAS  QLR2  PRZ2  RTSPP  AASP  ATPC  ADJSPD  Intermediate:  UCONSM    Output:  SPDAMT  SPDAMTQSETOT  SPDAMTTOT |
| IRR Generation Resource Base-Point Deviation Charge (BPDAMT) | Effective  06-10-2023  to  12-04-2025 | IRR Generation Resource Base Point Deviation Charge will not be calculated if any of the following are true:   * RRSFLAG = 1 * ECRSFLAG = 1 * FQDEVFLAG = 3 * QSFLAG = 1 * STATUSONTEST = 1 * SUSDFLAG = 1 (If the STATUSSTARTUP = 1 or AABP is less than AVGTLSL for the 15-minute Settlement Interval.) * Resource is a Qualifying Facility & EOCQFFLAG = 0 * FQDEVFLAG = 2 and deviation helps restore frequency * SBPBHDLFLAG = 0   Otherwise,  BPDAMT *q, r, p* = [Max(PR1, RTSPP *p*) \* OGENIRR + ADJBPD *q, r, p*  Where:  OGENIRR *q, r, p* = Max(0, TWTG *q, r, p* - (1/4 \* AABP *q, r, p* \* (1+ KIRR))]  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate BPDAMTQSETOT for each QSE by aggregating all BPDAMT calculated for the QSE for all its Resources, for each 15-minute Settlement Interval of the Operating Day:  **BPDAMTQSETOT *q* = BPDAMT *q, r, p***  Calculate BPDAMTTOT for the Operating Day by aggregating all BPDAMTQSETOT, for each 15-minute Settlement Interval of the Operating Day:  BPDAMTTOT = BPDAMTQSETOT *q* | 6.6.5.2  6.6.5.3 | Input:  RRSFLAG  ECRSFLAG  FQDEVFLAG  QSFLAG  STATUSONTEST  SUSDFLAG  STATUSSTARTUP  AVGTLSL  EOCQFFLAG  SBPBHDLFLAG  PR1  KIRR  RTSPP  AABP  TWTG  ADJBPD  Intermediate:  OGENIRR  Output:  BPDAMT  BPDAMTQSETOT  BPDAMTTOT |
| IRR Generation Resource Set-Point Deviation Charge (SPDAMT) | Effective  12-05-2025  to  Present | IRR Generation Resource Set Point Deviation Charge will not be calculated if any of the following are true:   * RRSFLAG = 1 * ECRSFLAG = 1 * FQDEVFLAG = 3 * QSFLAG = 1 * STATUSONTEST = 1 * SUSDFLAG = 1 (If the STATUSSTARTUP = 1 or AASP is less than AVGTLSL for the 15-minute Settlement Interval.) * Resource is a Qualifying Facility & EOCQFFLAG = 0 * FQDEVFLAG = 2 and deviation helps restore frequency * SBPBHDLFLAG = 0 * SPDEXEMPTFLAG = 1   Otherwise,  SPDAMT *q, r, p* = [Max(PR1, RTSPP *p*) \* OGENIRR + ADJSPD *q, r, p*  Where:  OGENIRR *q, r, p* = Max(0, TWTG *q, r, p* - (1/4 \* AASP *q, r, p* \* (1+ KIRR))]  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate SPDAMTQSETOT for each QSE by aggregating all SPDAMT calculated for the QSE for all its Resources, for each 15-minute Settlement Interval of the Operating Day:  **SPDAMTQSETOT *q* = SPDAMT *q, r, p***  Calculate SPDAMTTOT for the Operating Day by aggregating all SPDAMTQSETOT for each 15-minute Settlement Interval of the Operating Day:  SPDAMTTOT = SPDAMTQSETOT *q* | 6.6.5.4  6.6.5.6 | Input:  RRSFLAG  ECRSFLAG  FQDEVFLAG  SPDEXEMPTFLAG  QSFLAG  STATUSONTEST  SUSDFLAG  STATUSSTARTUP  AVGTLSL  EOCQFFLAG  SBPBHDLFLAG  PR1  KIRR  RTSPP  AASP  TWTG  ADJSPD  Intermediate:  OGENIRR  Output:  SPDAMT  SPDAMTQSETOT  SPDAMTTOT |
| Energy Storage Resource Set-Point Deviation Charge for Over Performance (SPDAMT) | Effective  12-05-2025  to  Present | Energy Storage Resource Set Point Deviation Charge for Over Performance will not be calculated if any of the following are true:   * RRSFLAG = 1 * ECRSFLAG = 1 * FQDEVFLAG = 3 * STATUSONTEST = 1 * SUSDFLAG = 1 (If the STATUSSTARTUP = 1 or AASP is less than AVGTLSL for the 15-minute Settlement Interval.) * FQDEVFLAG = 2 and deviation helps restore frequency * SPDEXEMPTFLAG = 1   Otherwise,  SPDAMT *q, r, p* = Max (PR3, RTSPP *p*) \* OPESR *q, r, p* + ADJSPD *q, r, p*  Where:  OPESR *q, r, p* = Max [0, (TWTG *q, r, p* – 1/4 \* Max [(AASP *q, r, p* + ABS (K3 \* AASP *q, r, p*)), (AASP *q, r, p* + Q3)])]  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate SPDAMTQSETOT for each QSE by aggregating all SPDAMT calculated for the QSE for all its Resources, for each 15-minute Settlement Interval of the Operating Day:  **SPDAMTQSETOT *q* = SPDAMT *q, r, p***  Calculate SPDAMTTOT for the Operating Day by aggregating all SPDAMTQSETOT for each 15-minute Settlement Interval of the Operating Day:  SPDAMTTOT = SPDAMTQSETOT *q* | 6.6.5.1  6.6.5.5  6.6.5.6 | Input:  RRSFLAG  ECRSFLAG  FQDEVFLAG  SPDEXEMPTFLAG  STATUSONTEST  SUSDFLAG  STATUSSTARTUP  AVGTLSL  PR3  K3  Q3  RTSPP  AASP  TWTG  ADJSPD  Intermediate:  OPESR  Output:  SPDAMT  SPDAMTQSETOT  SPDAMTTOT |
| Energy Storage Resource Set-Point Deviation Charge for Under Performance (SPDAMT) | Effective  12-05-2025  to  Present | Energy Storage Resource Set Point Deviation Charge for Under Performance will not be calculated if any of the following are true:   * RRSFLAG = 1 * ECRSFLAG = 1 * FQDEVFLAG = 3 * STATUSONTEST = 1 * SUSDFLAG = 1 (If the STATUSSTARTUP = 1 or AASP is less than AVGTLSL for the 15-minute Settlement Interval.) * FQDEVFLAG = 1 and deviation helps restore frequency * SPDEXEMPTFLAG = 1   Otherwise,  SPDAMT *q, r, p* = (-1) \* Min (PR4, RTSPP *p*) \* Min (1, KP2) \* UPESR *q, r, p* + ADJSPD *q, r, p*  Where:  UPESR *q, r, p* = Max [0, 1/4 \* Min [(AASP *q, r, p* – ABS (K4 \* AASP *q, r, p*)), (AASP *q, r, p* - Q4)] - TWTG *q, r, p*]  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate SPDAMTQSETOT for each QSE by aggregating all SPDAMT calculated for the QSE for all its Resources, for each 15-minute Settlement Interval of the Operating Day:  **SPDAMTQSETOT *q* = SPDAMT *q, r, p***  Calculate SPDAMTTOT for the Operating Day by aggregating all SPDAMTQSETOT for each 15-minute Settlement Interval of the Operating Day:  SPDAMTTOT = SPDAMTQSETOT *q* | 6.6.5.1  6.6.5.5.1  6.6.5.6 | Input:  RRSFLAG  ECRSFLAG  FQDEVFLAG  SPDEXEMPTFLAG  STATUSONTEST  SUSDFLAG  STATUSSTARTUP  AVGTLSL  PR4  K4  KP2  Q4  RTSPP  AASP  TWTG  ADJSPD  Intermediate:  UPESR  Output:  SPDAMT  SPDAMTQSETOT  SPDAMTTOT |
| Load-Allocated Base Point Deviation Payment (LABPDAMT) | Effective  12-01-2010  to  12-04-2025 | **LABPDAMT *q* = (-1) \* BPDAMTTOT \* LRS *q***  The calculation for BPDAMTTOT is described in the BPDAMT section. | 6.6.5.4 | Input:  BPDAMTTOT  LRS  Output:  LABPDAMT |
| Load-Allocated Set Point Deviation Payment (LASPDAMT) | Effective  12-05-2025  to  Present | **LASPDAMT *q* = (-1) \* SPDAMTTOT \* LRS *q***  The calculation for SPDAMTTOT is described in the SPDAMT section. | 6.6.5.7 | Input:  SPDAMTTOT  LRS  Output:  LASPDAMT |
| RMR Standby Payment (RMRSBAMT) | Effective  04-05-2019  to  Present | RMRSBAMT *q, r, p* = (-1) \* RMRSBPR *q, r, p*  Where:  RMRSBPR *q, r, p* = (RMRMNFNCC *q, r, p* \* (1 + RMRIF \* RMRCRF *q, r, p* \* RMRARF *q, r, p*) + RMRMNFCC) / MH *q, r, p*)  Where:  RMR Capacity Reduction Factor (RMRCRF):  If (RMRTCAP *q, r* + RMRTCAPA *q, r* ≥ RMRCCAP *q, r*)  Then, RMRCRF *q, r* = 1  Otherwise, RMRCRF *q, r, p* = Max (0, 1 – 2 \* (RMRCCAP *q, r* – RMRTCAP *q, r*) **/** RMRCCAP *q, r*)  RMR Availability Reduction Factor (RMRARF):  If (RMRHREAF *q, r, p* ≥ RMRTA *q, r, p*)  Then, RMRARF *q, r, p* = 1  Otherwise, RMRARF *q, r, p* = Max (0, 1 - (RMRTA *q, r, p* - RMRHREAF *q, r, p*) \* 2)  RMR Hourly Rolling Equivalent Availability Factor (RMRHREAF):  RMRHREAF *q, r, p* = Min [1,  Pursuant to section 3.14.1.17(c), when 4380 hours have not elapsed since start of the RMR contract, the RMRHREAF is calculated as follows:  RMRHREAF *q, r, p* = Min [1,  The number of elapsed hours (RMREH) is not defined in the Nodal Protocols but was added here to handle the above calculation.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate RMRSBAMTQSETOT for each QSE by aggregating all RMRSBAMT calculated for the QSE for all its RMR Resources, for each hour of the Operating Day:  **RMRSBAMTQSETOT *q* = RMRSBAMT *q, r, p***  Calculate RMRSBAMTTOT for the Operating Day by aggregating all RMRSBAMTQSETOT, for each hour of the Operating Day:  RMRSBAMTTOT = RMRSBAMTQSETOT *q* | 6.6.6.1  6.6.6.5 | Input:  RMREH  RMRAFLAG  RMRTA  RMRTCAP  RMRTCAPA  RMRCCAP  RMRIF  MH  RMRMNFNCC  RMRMNFCC  HSL  Intermediate:  RMRSBPR  RMRCRF  RMRARF  RMRHREAF  Output:  RMRSBAMT  RMRSBAMTQSETOT  RMRSBAMTTOT |
| RMR Payment for Energy (RMREAMT) | Effective  10-12-2016  to  Present | RMREAMT *q, r* = (-1) \*(((FIP + RMRCEFA *q, r, p*) \* RMRSUFQ *q, r, p, st* / RMRH *q, r*) \* RMRALLOCFLAG *q, r, p* + (((FIP + RMRCEFA *q, r, p*) \* RMRHR *q, r, p*  + RMRVCC *q, p, r*) \* RTMG *q, r, p, i*))  Where *st* = start type (STARTTYPE = 1 (hot), 2 (intermediate) or 3 (cold)  Where:  For the Initial calculations, RMRVCC = 0.  For the first scheduled Final of a month,  If the RMRMFCOST is null for the first Final for the month currently being calculated, then RMRVCC = 0.  If the RMRMFCOST is not null for the first Final for the month, then calculate RMRVCC as follows:  RMRVCC *q, p, r* = (RMRMFCOST *q, p, r* + RMRMEAMT *q, p, r*) / MRTMG *q, p, r*  Where:  RMRMEAMT *q, p, r* = RMREAMT *q, p, r, h*  MRTMG *q, p, r* = RTMG *q, p, r*  For the first scheduled True-up of a month,  RMRVCC *q, p, r* = (RMRMFCOST *q, p, r* + RMRMEAMT *q, p, r*) / MRTMG *q, p, r*  Where:  RMRMEAMT *q, p, r* = RMREAMT *q, p, r, h*  MRTMG *q, p, r* = RTMG *q, p, r*  Subsequent True-ups (after the first) for the month will use the RMRVCC stored from this calculation.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate RMREAMTQSETOT for each QSE by aggregating all RMREAMT calculated for the QSE for all its RMR Resources, for each hour of the Operating Day:  **RMREAMTQSETOT *q* =  RMREAMT *q, r, p***  Calculate RMREAMTTOT for the Operating Day by aggregating all RMREAMTQSETOT, for each hour of the Operating Day:  RMREAMTTOT = RMREAMTQSETOT *q* | 6.6.6.2  6.6.6.5 | Input:  FIP  RMRCEFA  RMRSUFQ  STARTTYPE  RMRH  RMRALLOCFLAG  RMRHR  RTMG  RMRMFCOST  RMREAMT (previous run)  Intermediate:  RMRVCC  RMRMEAMT  MRTMG  Output:  RMREAMT  RMREAMTQSETOT  RMREAMTTOT |
| RMR Adjustment Charge (RMRAAMT) | Effective  04-12-2016  to  Present | RMRAAMT *q* = (-1) \* [((-1) \* RESREV *q, r, qsc, p, i* + EMREAMT *q, r, p, i* + RUCMWAMT *q, r, p, h* + RUCCBAMT *q, r, p, h* + RUCDCAMT *q, r, p, h* + VSSEAMT *q, r, p, i* + VSSVARAMT *q, r, p, i*)] + ADJRMRA  *q, r, p, h*  Where *i* is the 15-minute interval within the hourly Settlement Interval.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate RMREAMTTOT for the Operating Day by aggregating all RMREAMTQSETOT, for each hour of the Operating Day:  RMRAAMTTOT = RMRAAMT *q* | 6.6.6.3  6.6.6.5 | Input:  RESREV  EMREAMT  RUCMWAMT  RUCCBAMT  RUCDCAMT  VSSEAMT  VSSVARAMT  ADJRMRA  Output:  RMRAAMT  RMRAAMTTOT |
| RMR Charge for Unexcused Misconduct  (RMRNPAMT) | Effective  12-01-2010  to  Present | RMRNPAMT *q, r, p* = RMR\_NONPERFORMANCE\_AMT \* RMRNPFLAG *q, r, p*  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate RMRNPAMTQSETOT for each QSE by aggregating all RMRNPAMT calculated for the QSE for all its RMR Resources, for each hour of the Operating Day:  **RMRNPAMTQSETOT *q* =  RMRNPAMT *q, r, p***  Calculate RMRNPAMTTOT for the Operating Day by aggregating all RMRNPAMTQSETOT, for each hour of the Operating Day:  RMRNPAMTTOT = RMRNPAMTQSETOT *q* | 6.6.6.4  6.6.6.5 | Input:  RMR\_NONPERFORMANCE\_AMT (factor)  RMRNPFLAG  Output:  RMRNPAMT  RMRNPAMTQSETOT  RMRNPAMTTOT |
| RMR Service Charge (LARMRAMT) | Effective  10-12-2016  to  Present | LARMRAMT *q* = (-1) \* (RMRSBAMTTOT + RMREAMTTOT + RMRAAMTTOT + RMRNPAMTTOT / H) \* HLRS *q*  Where:  H = the number of hours in the Operating Day  The calculation for RMRSBAMTTOT is described in the RMRSBAMT section.  The calculation for RMREAMTTOT is described in the RMREAMT section.  The calculation for RMRAAMTTOT is described in the RMRAAMT section.  The calculation for RMRNPAMTTOT is described in the RMRNPAMT section. | 6.6.6.5 | Input:  RMRSBAMTTOT  RMREAMTTOT  RMRAAMTTOT  RMRNPAMTTOT  HLRS  Output:  LARMRAMT |
| Voltage Support Service Var Payment  (VSSVARAMT) | Effective  12-01-2010  to  12-04-2025 | The payment for a given 15-minute Settlement Interval to each QSE representing a Generation Resource that operates in accordance with an ERCOT Dispatch Instruction is calculated as follows:  If VSSVARLAG *q, r, p* > 0 then,  VSSVARAMT *q, r, p* = (-1) \* VSSVARPR \* VSSVARLAG *q, r, p* + ADJVSS *q, r, p*  If VSSVARLEAD *q, r, p* > 0 then,  VSSVARAMT *q, r, p* = (-1) \* VSSVARPR \* VSSVARLEAD *q, r, p* + ADJVSS *q, r, p*  Where:  VSSVARLAG *q, r, p* = Max [0, Min (¼ \* VSSVARIOL *q, r, p*, RTVAR *q, r, p*) – (¼ \* URLLAG *q, r, p*)]  VSSVARLEAD *q, r, p* = Max {0, [(¼ \* URLLEAD *q, r, p*) – Max ((¼ \* VSSVARIOL *q, r, p*), RTVAR *q, r, p*)]}  URLLAG *q, r, p* = 0.32868 \* HSL *q, r, p*  URLLEAD *q, r, p* = (-1) \* 0.32868 \* HSL *q, r, p*  And where:  The HSL used to calculate URLLAG or URLLEAD for the interval for a Train is the HSL that corresponds to the Configuration the Train operates in Real-Time, as determined by Telemetered Configuration status (CCTS).  ADJVSS is a business-required adjustment cut, beyond what is in the protocol.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate VSSVARAMTQSETOT by aggregating all VSSVARAMT calculated for the QSE, for each 15-minute interval of the Operating Day:  **VSSVARAMTQSETOT *q* =  VSSVARAMT *q, r, p***  Calculate VSSVARAMTTOT by aggregating all VSSVARAMTQSETOT, for each 15-minute interval of the Operating Day:  VSSVARAMTTOT = VSSVARAMTQSETOT *q* | 6.6.7.1  6.6.7.2 | Input:  VSSVARIOL  VSSVARPR  RTVAR  HSL  CCTS  ADJVSS  Intermediate:  VSSVARLAG  VSSVARLEAD  URLLAG  URLLEAD  Output:  VSSVARAMT  VSSVARAMTQSETOT  VSSVARAMTTOT |
| Voltage Support Service Var Payment  (VSSVARAMT) | Effective  12-05-2025  to  Present | The payment for a given 15-minute Settlement Interval to each QSE representing a Generation Resource or ESR that operates in accordance with an ERCOT Dispatch Instruction is calculated as follows:  If VSSVARLAG *q, r, p* > 0 then,  VSSVARAMT *q, r, p* = (-1) \* VSSVARPR \* VSSVARLAG *q, r, p* + ADJVSS *q, r, p*  If VSSVARLEAD *q, r, p* > 0 then,  VSSVARAMT *q, r, p* = (-1) \* VSSVARPR \* VSSVARLEAD *q, r, p* + ADJVSS *q, r, p*  Where:  VSSVARLAG *q, r, p* = Max [0, Min (¼ \* VSSVARIOL *q, r, p*, RTVAR *q, r, p*) – (¼ \* URLLAG *q, r, p*)]  VSSVARLEAD *q, r, p* = Max {0, [(¼ \* URLLEAD *q, r, p*) – Max ((¼ \* VSSVARIOL *q, r, p*), RTVAR *q, r, p*)]}  NETVSSA *q, r, p* = RTCL *q, r, p* + RTMG *q, r, p*  If NETVSSA *q, r, p* < 0, then  URLLAG *q, r, p* = 0.32868 \* ABS (LSL *q, r, p*)  URLLEAD *q, r, p* = (-1) \* 0.32868 \* ABS (LSL *q, r, p*)  Else,  URLLAG *q, r, p* = 0.32868 \* HSL *q, r, p*  URLLEAD *q, r, p* = (-1) \* 0.32868 \* HSL *q, r, p*  And where:  Only an ESR can have a NETVSSA < 0. This is when an ESR has a net withdrawal for the Settlement Interval.  The HSL used to calculate URLLAG or URLLEAD for the interval for a Train is the HSL that corresponds to the Configuration the Train operates in Real-Time, as determined by Telemetered Configuration status (CCTS).  ADJVSS is a business-required adjustment cut, beyond what is in the protocol.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate VSSVARAMTQSETOT by aggregating all VSSVARAMT calculated for the QSE, for each 15-minute interval of the Operating Day:  **VSSVARAMTQSETOT *q* =  VSSVARAMT *q, r, p***  Calculate VSSVARAMTTOT by aggregating all VSSVARAMTQSETOT, for each 15-minute interval of the Operating Day:  VSSVARAMTTOT = VSSVARAMTQSETOT *q* | 6.6.7.1  6.6.7.2 | Input:  VSSVARIOL  VSSVARPR  RTVAR  RTCL  RTMG  LSL  HSL  CCTS  ADJVSS  Intermediate:  VSSVARLAG  VSSVARLEAD  NETVSSA  URLLAG  URLLEAD  Output:  VSSVARAMT  VSSVARAMTQSETOT  VSSVARAMTTOT |
| Voltage Support Service Energy Payment  (VSSEAMT) | Effective  04-02-2021  to  12-04-2025 | The lost opportunity payment for a given 15-minute Settlement Interval, if applicable:  If VSSENIOL *q, r, p* = 1 then,  VSSEAMT *q, r, p* = (-1) \* Max [0, (RTSPP p – RTEOCOST *q, r, p*) \* Max (0, (HSL *q, r, p* \* ¼ - RTMG *q, r, p*))] + ADJVSSE *q, r, p*  Where:  The HSL used to calculate VSSEAMT for the interval for a Train is the HSL that corresponds to the Configuration the Train operates in Real-Time, as determined by Telemetered Configuration status (CCTS).  ADJVSSE is a business-required adjustment cut, beyond what is in the protocol.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate VSSEAMTQSETOT by aggregating all VSSEAMT calculated for the QSE, for each 15-minute interval of the Operating Day:  **VSSEAMTQSETOT *q* =  VSSEAMT *q, r, p***  Calculate VSSEAMTTOT by aggregating all VSSEAMTQSETOT, for each 15-minute interval of the Operating Day:  VSSEAMTTOT = VSSEAMTQSETOT *q* | 6.6.7.1  6.6.7.2 | Input:  VSSENIOL  RTSPP  RTEOCOST  HSL  CCTS  RTMG  ADJVSSE  Output:  VSSEAMT  VSSEAMTQSETOT  VSSEAMTTOT |
| Voltage Support Service Energy Payment  (VSSEAMT) | Effective  12-05-2025  to  Present | The lost opportunity payment for a given 15-minute Settlement Interval, if applicable:  If VSSENIOL *q, r, p* = 1 then,  If NETVSSA *q, r, p* < 0 then,  VSSEAMT *q, r, p* = (-1) \* Max (0, RTSPP p) \* Max (0, (ABS(LSL *q, r, p* \* ¼ - NETVSSA *q, r, p*))) + ADJVSSE *q, r, p*  Else, if NETVSSA *q, r, p* >= 0 then,  VSSEAMT *q, r, p* = (-1) \* Max (0, (RTSPP p – RTEOCOST *q, r, p*) \* Max (0, (HSL *q, r, p* \* ¼ - NETVSSA *q, r, p*))) + ADJVSSE *q, r, p*  Where:  NETVSSA *q, r, p* = RTCL *q, r, p* + RTMG *q, r, p*  The HSL used to calculate VSSEAMT for the interval for a Train is the HSL that corresponds to the Configuration the Train operates in Real-Time, as determined by Telemetered Configuration status (CCTS).  ADJVSSE is a business-required adjustment cut, beyond what is in the protocol.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate VSSEAMTQSETOT by aggregating all VSSEAMT calculated for the QSE, for each 15-minute interval of the Operating Day:  **VSSEAMTQSETOT *q* =  VSSEAMT *q, r, p***  Calculate VSSEAMTTOT by aggregating all VSSEAMTQSETOT, for each 15-minute interval of the Operating Day:  VSSEAMTTOT = VSSEAMTQSETOT *q* | 6.6.7.1  6.6.7.2 | Input:  VSSENIOL  RTSPP  RTEOCOST  LSL  HSL  CCTS  RTMG  RTCL  ADJVSSE  Intermediate:  NETVSSA  Output:  VSSEAMT  VSSEAMTQSETOT  VSSEAMTTOT |
| Voltage Support Service Charge (LAVSSAMT) | Effective  12-01-2010  to  Present | LAVSSAMT *q* = (-1) \* (VSSVARAMTTOT + VSSEAMTTOT) \* LRS *q*  Where:  The calculation for VSSVARAMTTOT is described in the VSSVARAMT section.  The calculation for VSSEAMTTOT is described in the VSSEAMT section. | 6.6.7.2 | Input:  VSSVARAMTTOT  VSSEAMTTOT  LRS  Output:  LAVSSAMT |
| Black Start Capacity Payment (BSSAMT) | Effective  12-01-2010  to  Present | BSSAMT *q, r* = (-1) \* BSSPR *q, r* \* BSSARF *q, r*  Where:  Black Start Service Availability Reduction Factor  If (BSSHREAF *q, r* ≥ 0.85) then,  BSSARF *q, r* = 1  Otherwise:  BSSARF *q, r* = Max (0, 1 - (0.85 - BSSHREAF *q, r*) \* 2)  Black Start Service Hourly Rolling Equivalent Availability Factor  If (BSSEH *q, r* < 4380) then,  BSSHREAF *q, r* = 1  Otherwise:  BSSHREAF *q, r* = ( BSSAFLAG *q, r, h*) / 4380  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate BSSAMTQSETOT by aggregating all BSSAMT calculated for the QSE, for each hour of the Operating Day:  **BSSAMTQSETOT *q* = BSSAMT *q, r***  Calculate BSSAMTTOT for the Operating Day by aggregating all BSSAMTQSETOT, for each hour of the Operating Day:  BSSAMTTOT = BSSAMTQSETOT *q* | 6.6.8.1  6.6.8.2 | Inputs:  BSSPR  BSSEH  BSSAFLAG  Intermediate:  BSSHREAF  BSSARF  Output:  BSSAMT  BSSAMTQSETOT  BSSAMTTOT |
| Black Start Capacity Charge (LABSSAMT) | Effective  12-01-2010  to  Present | LABSSAMT *q* = (-1) \* BSSAMTTOT \* HLRS *q*  Where:  The calculation for BSSAMTTOT is described in the BSSAMT section. | 6.6.8.2 | Input:  BSSAMTTOT  HLRS  Output:  LABSSAMT |
| Payment for Emergency Power Increase directed by ERCOT (EMREAMT) | Effective  12-01-2010  to  12-04-2025 | EMREAMT *q, r, p* = (-1) \* EMREPR *q, r, p* \* EMRE *q, r, p*  Where:  EMREPR *q, r, p* = Max (0, EBPWAPR *q, r, p* – RTSPP *p*)  EMRE *q, r, p* = Max (0, Min (AEBP*q, r, p*, RTMG *q, r, p*) – ¼ \* BP *q, r, p*)  Where:  EBPWAPR *q, r, p* = (EBPPR *q, r, p, y* \* EBP *q, r, p, y* \* TLMP *y*) **/** (EBP *q, r, p, y* \* TLMP *y*)  AEBP*q, r, p* =  (EBP *q, r, p, y* \* TLMP*y* / 3600)  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate EMREAMTQSETOT by aggregating all EMREAMT calculated for the QSE, for each 15-minute interval of the Operating Day:  EMREAMTQSETOT *q* = EMREAMT *q, r, p*  Calculate EMREAMTTOT by aggregating all EMREAMTQSETOT, for each 15-minute interval of the Operating Day:  EMREAMTTOT = EMREAMTQSETOT *q* | 6.6.9.1  6.6.9.2 | Input:  RTSPP  EBPWAPR  AEBP  RTMG  BP  Intermediate:  EMRE  EMREPR  Output:  EMREAMT  EMREAMTQSETOT  EMREAMTTOT |
| Payment for Emergency Operations Settlement (EMREAMT) | Effective  12-05-2025  to  Present | For each 15-Minute Settlement Interval of the Operating Day qualifying for Emergency Settlement under PR6.6.9.1(1), (EMGSETLFLAG = 1). EMREAMT is calculated as follows:  EMREAMT *q, r, p* = (-1) \* (EMREPRGEN *q, r, p* \* EMREGEN *q, r, p*) + (EMREPRLOAD *q, r, p* \* EMRELOAD *q, r, p*) + ADJEMRE *q, r, p*  Where:  If any EBP > 0 then:  EMREPRGEN *q, r, p* = Max (0, EBPWAPRGEN *q, r, p* – RTSPP *p*)  EMREGEN *q, r, p* = Max (0, Min (AEBPGEN *q, r, p ,* RTMG *q, r, p*) – ¼ \* Max (0, BP *q, r, p*))  If any EBP < 0 then:  EMREPRLOAD *q, r, p* = Max (0, RTSPP *p* – EBPWAPRLOAD *q, r, p*)  EMRELOAD *q, r, p* = Min (0, Max (AEBPLOAD *q, r, p*, RTCL *q, r, p*) – ¼ \* Min(0, BP *q, r, p*))  For each 15-Minute Settlement Interval of the Operating Day qualifying for Emergency Settlement under PR6.6.9.1(2), (EMGSETLFLAG = 2). EMREAMT is calculated as follows:  EMREAMT *q, r, p* = Min (0, RTENET *q, r, p* + RTASNET *q, r*) + ADJEMRE *q, r, p*  Where RTENET is calculated as follows:  RTENET *q, r, p* = RTEREV*q, r, p* - RTEREVT*q, r, p*  Where:  RTEREV*q, r, p* = RTSPP *p* \* (EMREGEN *q, r, p* + EMRELOAD *q, r, p*)  RTEREVT*q, r, p* = EBPWAPRGEN *q, r, p* \* EMREGEN *q, r, p* + EBPWAPRLOAD *q, r, p* \* EMRELOAD *q, r, p*  If any EBP > 0 then:  EMREGEN *q, r, p* = Max (0, Min (AEBPGEN *q, r, p,*RTMG *q, r, p*))  If any EBP < 0 then:  EMRELOAD *q, r, p* = Min (0, Max (AEBPLOAD *q, r, p*, RTCL *q, r, p*))  Where RTASNET is calculated as follows:  RTASNET *q, r* = RTRUNET *q, r* + RTRDNET *q, r* + RTNSNET *q, r* + RTRRNET *q, r* + RTECRNET *q, r*  Where each AS type net is calculated as follows and ‘XX’ is a placholder for the following AS types (RU, RD, RR, NS, or ECR):  RTXXNET *q, r* = RTXXREV *q, r* - (¼) \* RTXXREVT *q, r, p*  RTXXREVT*q, r, p* = RTXXWAPR *q, r, p* \* RTXXAWD *q, r*  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate EMREAMTQSETOT by aggregating all EMREAMT calculated for the QSE, for each 15-minute interval of the Operating Day:  EMREAMTQSETOT *q* = EMREAMT *q, r, p*  Calculate EMREAMTTOT by aggregating all EMREAMTQSETOT, for each 15-minute interval of the Operating Day:  EMREAMTTOT = EMREAMTQSETOT *q* | 6.6.9.1  6.6.9.2 | Input:  AEBPGEN  AEBPLOAD  ADJEMRE  BP  EBPWAPRGEN  EBPWAPRLOAD  EMGSETLFLAG  RTCL  RTMG  RTSPP  RTXXAWD  RTXXREV  RTXXWAPR  Intermediate:  EMREGEN  EMRELOAD  EMREPRGEN  EMREPRLOAD  RTASNET  RTENET  RTEREV  RTEREVT  RTXXNET  RTXXREVT  Output:  EMREAMT  EMREAMTQSETOT  EMREAMTTOT |
| Charge for Emergency Operations Settlement (LAEMREAMT) | Effective  12-01-2010  to  Present | LAEMREAMT *q* = (-1) \* EMREAMTTOT \* LRS *q*  Where:  The calculation for EMREAMTTOT is described in the EMREAMT section. | 6.6.9.2 | Input:  EMREAMTTOT  LRS  Output:  LAEMREAMT |
| Real-Time Revenue Neutrality Allocation (LARTRNAMT) | Effective  02-11-2022  to  Present | For Operating Days when the DAM is executed:  LARTRNAMT *q* = (-1) \* (RTEIAMTTOT + BLTRAMTTOT + RTDCIMPAMTTOT + RTESOGAMTTOT + RTCCAMTTOT + RTOBLAMTTOT / 4 + RTOBLLOAMTTOT /4) \* LRS *q*  For Operating Days when ERCOT is unable to execute the DAM:  **LARTRNAMT *q* = (-1) \* (RTEIAMTTOT + BLTRAMTTOT + RTDCIMPAMTTOT + RTESOGAMTTOT + RTCCAMTTOT + NDRTOBLAMTTOT / 4 + NDRTOPTAMTTOT / 4 + NDRTOPTRAMTTOT /4 + NDRTOBLRAMTTOT /4) \* LRS *q***  Where:  The calculation for RTEIAMTTOT is described in the RTEIAMT section.  The calculation for BLTRAMTTOT is described in the BLTRAMT section.  The calculation for RTDCIMPAMTTOT is described in the RTDCIMPAMT section.  The calculation for RTESOGAMTTOT is described in the RTESOGAMT section.  The calculation for RTCCAMTTOT is described in the RTCCAMT section.  The calculation for RTOBLAMTTOT is described in the RTOBLAMT section.  The calculation for RTOBLLOAMTTOT is described in the RTOBLLOAMT section.  The calculation for NDRTOBLAMTTOT is described in the NDRTOBLAMT section.  The calculation for NDRTOPTAMTTOT is described in the NDRTOPTAMT section.  The calculation for NDRTOPTRAMTTOT is described in the NDRTOPTRAMT section.  The calculation for NDRTOBLRAMTTOT is described in the NDRTOBLRAMT section. | 6.6.10 | Input:  RTEIAMTTOT  BLTRAMTTOT  RTDCIMPAMTTOT  RTESOGAMTTOT  RTCCAMTTOT  RTOBLAMTTOT  RTOBLLOAMTTOT  NDRTOBLAMTTOT  NDRTOPTAMTTOT  NDRTOPTRAMTTOT  NDRTOBLRAMTTOT  LRS  Output:  LARTRNAMT |
| ERS Capacity Payment  (ERSPAMT) | Effective  06/01/2012  to  Present | ERSPAMTQSETOT *q* = ∑ *c, tp, d* (ERSPAMT *q, c, tp, d*)  ERSPAMTTOT *c, tp, d* = ∑ *q* (ERSPAMT *q, c, tp, d*) | 6.6.11.1  9.14.5 | Input:  ERSPAMT  Output:  ERSPAMTQSETOT  ERSPAMTTOT |
| ERS Capacity Charge  (LAERSAMT) | Effective  06/01/2012  to  Present | LAERSAMT  *q, c, tp, d* = ERSLRS  *q, c, tp, d*\* ERSPAMTTOT *c, tp, d*  LAERSAMTQSETOT *q* = ∑ *tp* LAERSAMT *q, c, tp, d* | 6.6.11.2  9.14.5 | Input:  ERSPAMTTOT  ERSLRS  Output:  LAERSAMT  LAERSAMTQSETOT |
| Firm Fuel Supply Service Amount (FFSSAMT) | Effective  11-15-2023  to  Present | FFSSAMT *q, r* = (-1) \* (FFSSSBF *q, r* + FFSSFRC *q, r*) + ADJFFSS *q, r*  Where:  FFSS Standby Fee:  FFSSSBF *q, r* = FFSSAWARD *q, r* \* FFSSCRF *q, r* \* FFSSARF *q, r* \* (1 – FFSSDRP *q, r*)  FFSS Award Amount:  FFSSAWARD *q, r* = FFSSPR *q, r* \* FFSSACAP *q, r*  FFSS Capacity Reduction Factor:  If (FFSSTCAP *q, r* ≥ FFSSACAP *q, r*) or if FFSSTCAP *q, r* does not exist, then:  FFSSCRF *q, r* = 1  Otherwise:  FFSSCRF *q, r* = max (0, 1 – 2 \* (FFSSACAP *q, r* – FFSSTCAP *q, r*) / FFSSACAP *q, r*)  FFSS Availability Reduction Factor:  If (FFSSHREAF *q, r* ≥ 0.90), then:  FFSSARF *q, r* = 1  Otherwise:  FFSSARF*q, r* = max (0, 1 – (0.90 – FFSSHREAF*q, r*) \* 2)  FFSS Hourly Rolling Equivalent Availability Factor:  If FFSSEH *q, r* ≥ 1452, then:  FFSSHREAF *q, r* = CAVCAP *q, r* / FFSSCACAP *q, r*  Otherwise:  FFSSHREAF *q, r* = (CAVCAP *q, r* / FFSSCACAP *q, r*) \* (FFSSEH *q, r* / 1452) + (1 – 1\*(FFSSEH *q, r* / 1452))  FFSS Cumulated Awarded Capacity:  If FFSSEH *q, r* ≥ 1452, then:  FFSSCACAP *q, r* = FFSSACAP *q, r*  Otherwise:  FFSSCACAP *q, r* = FFSSACAP *q, r*  Cumulated Available Capacity:  If FFSSEH *q, r* ≥ 1452, then:  CAVCAP *q, r* = AVCAP *q, r*  Otherwise:  CAVCAP *q, r* = AVCAP *q, r*  Available Capacity:  If the FFSSR or Alternate Resource is a Combined Cycle, then:  AVCAP *q, train* = max t*rain, hr* (max (FFSEDFLAG *q, train, hr*, FFSSAFLAG *q, ccgr, hr*) \* (min (HSL *q, ccgr, sp, hr*, FFSSACAP *q, train*)))  Otherwise:  AVCAP *q, r* = max (FFSEDFLAG *q, r, hr*, FFSSAFLAG *q, r, hr*) \* min (HSL *q, r, sp, hr*, FFSSACAP *q, r*)  Where:   * The FFSSAFLAG and HSL for the Alternate Resource are used in the intervals that an Alternate Resource is identified to replace an FFSSR. * ADJFFSS is a business-required adjustment cut, beyond what is in the protocol. * FFSSEH, CAVCAP, and FFSSCACAP are intermediate calculations beyond what is in the protocol.   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate FFSSAMTQSETOT by aggregating all FFSSAMT calculated for the QSE, for each hour of the Operating Day:  FFSSAMTQSETOT *q* = FFSSAMT *q, r*  Calculate FFSSAMTTOT by aggregating all FFSSAMTQSETOT, for each hour of the Operating Day:  FFSSAMTTOT = FFSSAMTQSETOT *q* | 6.6.14.2  6.6.14.3 | Input:  FFSSDRP  FFSSFRC  HSL  FFSSAFLAG  FFSEDFLAG  ADJFFSS  Intermediate:  FFSSEH  FFSSACAP  FFSSTCAP  FFSSPR  AVCAP  CAVCAP  FFSSCACAP  FFSSHREAF  FFSSARF  FFSSCRF  FFSSAWARD  FFSSSBF  Output:  FFSSAMT  FFSSAMTQSETOT  FFSSAMTTOT |
| Firm Fuel Supply Service Capacity Charge (LAFFSSAMT) | Effective  11-15-2022  to  Present | LAFFSSAMT *q* = (-1) \* FFSSAMTTOT \* HLRS *q*  Where:  The calculation for FFSSAMTTOT is described in the FFSSAMT section. | 6.6.14.3 | Input:  FFSSAMTTOT  HLRS  Output:  LAFFSSAMT |
| Payments for AS Capacity Sold in a Supplemental AS Market, including SASM or RSASM  (RTPCRUAMT)  (RTPCRDAMT)  (RTPCRRAMT)  (RTPCNSAMT)  (RTPCECRAMT) | Effective  06-10-2023  to  12-04-2025 | Where ‘XX’ is a placeholder for the following AS types (RU, RD, RR, NS, or ECR):  RTPCXXAMT *q, m* = (-1) \* MCPCXX *m* \* RTPCXX *q, m*  Where:  RTPCXX *q,**m* = PCXXR *q, r, m*  Where:  ‘*m*’ = SASM or RSASM.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate RTPCXXAMTQSETOT by aggregating all RTPCXXAMT calculated for the QSE for all SASM and RSASM, for each hour of the Operating Day:  RTPCXXAMTQSETOT *q* = (RTPCXXAMT *q, m*)  Calculate the total payment for procured capacity for the SASM or RSASM, for each hour of the Operating Day:  RTPCXXAMTTOT *m* = (RTPCXXAMT *q, m*) | 6.7.1  6.7.4 | Input:  PCXXR  MCPCXX  Intermediate:  RTPCXX  Output:  RTPCXXAMT  RTPCXXAMTTOT |
| Charges for Infeasible AS Capacity Due to Transmission Constraints  (RUINFQAMT)  (RDINFQAMT)  (RRINFQAMT)  (NSINFQAMT)  (ECRINFQAMT) | Effective 06-10-2023  to  12-04-2025 | Where ‘XX’ is a placeholder for the following AS types (RU, RD, RR, NS, or ECR):  **XXINFQAMT *q* = MCPCXX *DAM* \* XXINFQ *q***  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate the total Infeasible Quantity Amount, for each hour of the Operating Day:  XXINFQAMTTOT = (XXINFQAMT *q*) | 6.7.2.1  6.7.4 | Input:  MCPCXX  XXINFQ  Output:  XXINFQAMT  XXINFQAMTTOT |
| Charges for AS Capacity Replaced due to Failure to Provide  (RUFQAMTQSETOT)  (RDFQAMTQSETOT)  (RRFQAMTQSETOT)  (NSFQAMTQSETOT)  (ECRFQAMTQSETOT) | Effective  06-28-2024 to  12-04-2025 | Where ‘XX’ is a placeholder for the following AS types (RU, RD, RR, NS, or ECR):  **XXFQAMTQSETOT *q* = XXFQAMT *q* *+* RXXFQAMT *q***  Where:  XXFQAMT *q* = Max ((MCPCXX *m*), AVGRTASIP) \* (XXFQ *q* + TXXFQ *q*)  RXXFQAMT *q* = MCPCXX *rs* \* RXXFQ *q, rs*  AVGRTASIP = (RTRSVPOR *i* + RTRDP *i*) / 4  Where:  ‘*m*’ = DAM, SASM and RSASM.  ‘rs’ = RSASM.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate the Failure Quantity Total, for each hour of the Operating Day:  XXFQAMTTOT = (XXFQAMTQSETOT *q*) | 6.7.3  6.7.4 | Input:  MCPCXX  XXFQ  TXXFQ  RXXFQ  RTRSVPOR  RTRDP  Intermediate:  AVGRTASIP  XXFQAMT  RXXFQAMT  Output:  XXFQAMTQSETOT  XXFQAMTTOT |
| Adjustments to Cost Allocations for AS Procurement  (RTRUAMT)  (RTRDAMT)  (RTRRAMT)  (RTNSAMT)  (RTECRAMT) | Effective  06-10-2023  to  12-04-2025 | Where ‘XX’ is a placeholder for the following AS types (RU, RD, RR, NS, or ECR):  The adjustment to a QSE’s DAM charge for the AS Type for the Operating Hour, due to changes during the Adjustment Period or Real-Time:  **RTXXAMT *q* = XXCOST *q* – DAXXAMT *q***  Where:  The net total costs for the AS Type for a given Operating Hour:  XXCOSTTOT = (-1) \* ((RTPCXXAMTTOT *m*) + PCXXAMTTOT + XXFQAMTTOT + XXINFQAMTTOT)  Where:  The calculation for RTPCXXAMTTOT is described in the RTPCXXAMT section.  The calculation for PCXXAMTTOT is described in the PCXXAMTTOT section.  The calculation for XXFQAMTTOT is described in the XXFQAMT section.  The calculation for XXINFQAMTTOT is described in the XXINFQAMT section.  ‘*m*’ = SASM and RSASM.  Each QSE’s share of the net total costs for the AS Type for the Operating Hour:  XXCOST *q* = XXPR \* XXQ *q*  Where:  XXPR = XXCOSTTOT / XXQTOT  XXQTOT =XXQ *q*  XXQ *q* = XXO *q* – SAXXQ *q*  XXO *q* = (SAXXQTOT + RTPCXXTOT + PCXXTOT – XXFQTOT) \* HLRS *q*  XXFQTOT = (XXFQ *q* + RXXFQ *q*)  PCXXTOT = PCXX *q*  RTPCXXTOT = RTPCXX *q, m*  SAXXQTOT = SAXXQ *q*  SAXXQ *q* = DASAXXQ *q* + RTSAXXQ *q*  Where:  ‘*m*’ = SASM and RSASM. | 6.7.4 | Input:  DAXXAMT  RTPCXXAMTTOT  PCXXAMTTOT  XXFQAMTTOT  XXINFQAMTTOT  DASAXXQ  RTSAXXQ  RTPCXX  PCXX  XXFQ  RXXFQ  HLRS  Intermediate:  XXCOSTTOT  SAXXQ  SAXXQTOT  RTPCXXTOT  PCXXTOT  XXFQTOT  XXO  XXQ  XXQTOT  XXPR  XXCOST  Output:  RTXXAMT |
| Day-Ahead Updated Real-Time Procured Capacity Amount  (DARTPCRUAMT)  (DARTPCRDAMT)  (DARTPCRRAMT)  (DARTPCNSAMT)  (DARTPCECRAMT) | Effective  12-05-2025 to  Present | Where ‘XX’ is a placeholder for the following AS types (RU, RD, RR, NS, or ECR):  **DARTPCXXAMT *q* = (DAXXNOBL*q* -DASAXXQ *q*) \* DAXXPR - DAXXAMT *q***  Where:  DAXXNOBL *q* = DAPCXXQTOT \* HLRS *q*  DAPCXXQTOT = ( PCXXR *q, r, DAM* *+* DAXXOAWD *q* +DASAXXQ *q*) | 6.7.4 | Input:  PCXXR  DAXXOAWD  DASAXXQ  HLRS  DAXXPR  DAXXAMT  Intermediate:  DAPCXXQTOT  DAXXNOBL  Output:  DARTPCXXAMT |
| Real-Time AS Imbalance Payment or Charge (RTASIAMT) | Effective  08-23-2024 to  12-04-2025 | **RTASIAMT *q*  = (-1) \* ((RTASOLIMB*q* \* RTRSVPOR) + (RTASOFFIMB*q* \* RTRSVPOFF) + ADJRTASI q)**  Where:  RTASOLIMB ***q*** = RTOLCAP ***q*** – [(SYS\_GEN\_DISCFACTOR \* RTASRESP ***q*** \* ¼) – RTASOFF ***q*** – RTRUCNBBRESP ***q*** – RTNCLRNSRESP ***q*** – RTRMRRESP ***q***]  Where:  RTASOFF q= SYS\_GEN\_DISCFACTOR \* RTASOFFR q, r, p  RTNCLRNSRESP q = SYS\_GEN\_DISCFACTOR \*  RTNCLRNSRESPR q, r, p  RTRMRRESP q = SYS\_GEN\_DISCFACTOR \* (HECRADJ q, r, p + HRRADJ q, r, p + HRUADJ q, r, p + HNSADJ q, r, p) \* ¼  And, Where: RUC q, r, p, rucid = 1  RTRUCNBBRESP q = SYS\_GEN\_DISCFACTOR \* RTRUCASA q, r \* ¼  RTOLCAP q = (RTOLHSL q – RTMGQ q – SYS\_GEN\_DISCFACTOR \* (UGENA *q, r, p*)) + RTCLRCAP q + RTNCLRCAP q  Where for any resource with Under Generation Volumes (per Section 6.6.5, Base Point Deviation Charge):  If: BPDAMT q, r, p > 0 AND CAPEFLAG q, r, p = 0  Then set: UGENA q, r, p = UGEN q, r, p  Else, set: UGENA q, r, p = 0  And for determination of exclusion scenarios called out in 6.7.4(3):  If: TWTG q, r, p < (TPVLSL\_FACTOR \* (AVGTLSL q, r, p \* ¼))  AND: STATUSSTARTUP q, r, p = 1 AND HNSADJ q, r, p > 0  Then, Set: TPVLSLFLAG q, r, p = 1  Otherwise, Set: TPVLSLFLAG q, r, p = 0  Set CAPEFLAG q, r, p = 1 in every interval for Resources that are a:   * Nuclear Resource – Fuel Type Category= “NUC” * Reliability Must Run (RMR) Unit – Resource contracted per Start and Stop Time (RMR Contract Table).   And, set CAPEFLAG q, r, p = 1 in intervals that contain any of the below scenarios:   * A Resource has a telemetered STARTUP Resource Status and has less than or equal to zero Non-Spin Ancillary Service Responsibility.   (STATUSSTARTUP q, r, p = 1 AND HNSADJ q, r, p <= 0)   * A Resource has a telemetered SHUTDOWN Resource Status.   (STATUSSHUTDOWN q, r, p = 1)   * A Resource has a telemetered ONTEST Resource Status.   (STATUSONTEST q, r, p = 1)   * A Resource has a telemetered ONHOLD Resource Status.   (STATUSONHOLD q, r, p = 1)   * A Resource has a telemetered net real power (TWTG) less than 95% of the telemetered Low Sustained Limit (AVGTLSL).   (TPVLSLFLAG q, r, p = 0)   * The intervals are included in hours that a Resource has been Reliability Unit Committed (RUC) and the Commitment was NOT bought back or RUC-Committed for Additional Capacity.   (RUC q, r, p, rucid = 1 and RUCAC q, r, p, rucid <> 1)  For any interval where none of the above scenarios are true, set CAPEFLAG q, r, p = 0  And for application of 6.7.4(3) exclusion scenarios called out in 6.7.4(2)(a) and (b):  RTOLHSL q = SYS\_GEN\_DISCFACTOR \*  RTOLHSLRA q, r, p  RTMGQ q = SYS\_GEN\_DISCFACTOR \*  RTMGA q, r, p  Where:  If: CAPEFLAG q, r, p = 1  Then, set: RTOLHSLRA q, r, p = 0  Else, set: RTOLHSLRA q, r, p = RTOLHSLR q, r, p  If: CAPEFLAG q, r, p = 1  Then, set: RTMGA q, r, p =0  Else, set: RTMGA q, r, p =RTMG q, r, p  Review RTOLHSLRA and RTMGA values by q, r, p and cap any RTMGA value for an interval at the RTOLHSLRA value.  If: RTMGA q, r, p > RTOLHSLRA q, r, p  Then, set: RTMGA q, r, p = RTOLHSLRA q, r, p  Else, set: RTMGA q, r, p = RTMG q, r, p  RTCLRCAP q = RTCLRNPC q – RTCLRLPC q + RTCLRREG q  Where:  RTCLRNPC q = SYS\_GEN\_DISCFACTOR \* RTCLRNPCR q, r, p  RTCLRLPC q = SYS\_GEN\_DISCFACTOR \*  RTCLRLPCR q, r, p  RTCLRREG q = SYS\_GEN\_DISCFACTOR \*  RTCLRREGR q, r, p  RTNCLRCAP q = Min (Max (0.0, RTNCLRNPC q – RTNCLRLPC q), (RTNCLRRS q + RTNCLECRS q) \* 1.5)  Where:  RTNCLRNPC q = SYS\_GEN\_DISCFACTOR \* RTNCLRNPCR q, r, p  RTNCLRLPC q = SYS\_GEN\_DISCFACTOR \*  RTNCLRLPCR q, r, p  RTNCLRRRS q = SYS\_GEN\_DISCFACTOR \*  RTNCLRRRSR q, r, p  RTNCLRECRS q = SYS\_GEN\_DISCFACTOR \*  RTNCLRECRSR q, r, p  RTASOFFIMB q = RTOFFCAP q – (RTASOFF q + RTNCLRNSRESP q)  Where:  RTOFFCAP q = (SYS\_GEN\_DISCFACTOR \* RTCST30HSL q) + (SYS\_GEN\_DISCFACTOR \* RTOFFNSHSL q) + RTNCLRNSCAP q  RTNCLRNSCAP q = Min (Max (RTNCLRNPC q – RTNCLRLPC q, 0.0), RTNCLRNS q \* 1.5)  RTNCLRNS q = SYS\_GEN\_DISCFACTOR \*  RTNCLRNSR q, r, p  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate the total Real-Time AS Imbalance amount, for each 15-minute interval of the Operating Day:  RTASIAMTTOT = (RTASIAMT *q*) | 6.7.5  6.7.6 | Input:  RTCLRREGR  RTCLRNPCR  RTCLRLPCR  RTNCLRNPCR  RTNCLRLPCR  RTNCLRRRSR  RTNCLRECRSR  RTASOFFR  RTRUCASA  RTASRESP  RTCST30HSL  RTOFFNSHSL  RTRSVPOR  RTRSVPOFF  ADJRTASI  BPDAMT  UGEN  STATUSSHUTDOWN  STATUSONTEST  STATUSONHOLD  STATUSSTARTUP  RTOLHSLR  RTMG  TWTG  RUC  RUCAC  HECRADJ  HRRADJ  HRUADJ  HNSADJ  TWTG  AVGTLSL  AVGTLSL  TPVLSL\_FACTOR  SYS\_GEN\_DISCFACTOR  RTNCLRNSRESPR  RTNCLRNSR  Intermediate:  RTCLRCAP  RTNCLRCAP  RTOLCAP  RTASOLIMB  RTOFFCAP  RTASOFFIMB  UGENA  CAPEFLAG  RTNCLRNSRESP  RTNCLRNS  RTNCLRNSCAP  RTASOFF  TPVLSLFLAG  RTMGA  RTMGQ  RTOLHSLRA  RTOLHSL  RTRUCNBBRESP  RTRMRRESP  RTCLRREG  RTCLRNPC  RTCLRLPC  RTNCLRNPC  RTNCLRLPC  RTNCLRRRS  RTNCLRECRS  Output:  RTASIAMT  RTASIAMTTOT |
| Real-Time Reliability Deployment AS Imbalance Amount (RTRDASIAMT) | Effective  06-25-2015  to  12-04-2025 | **RTRDASIAMT q = (-1) \* (RTASOLIMB q \* RTRDP)**  Where:  The calculation for RTASOLIMB is described in the RTASIAMT section.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate the total Real-Time Reliability Deployment AS Imbalance amount, for each 15-minute interval of the Operating Day:  RTRDASIAMTTOT = (RTRDASIAMT *q*) | 6.7.5  6.7.6 | Input:  RTASOLIMB  RTRDP  Output:  RTRDASIAMT  RTRDASIAMTTOT |
| Real-Time RUC AS Reserve Amount (RTRUCRSVAMT) | Effective  06-01-2014  to  12-04-2025 | **RTRUCRSVAMT q = (-1) \* (RTRUCRESP q \* RTRSVPOR)**  Where:  RUC q, r, p, rucid = 5  RTRUCRESP q = RTRUCASA q, r \* ¼  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate the total Real-Time RUC AS Reserve amount, for each 15-minute interval of the Operating Day:  RTRUCRSVAMTTOT = ( RTRUCRSVAMT *q*) | 6.7.5  6.7.6 | Input:  RTRUCASA  RTRSVPOR  RUC  Intermediate:  RTRUCRESP  Output:  RTRUCRSVAMT  RTRUCRSVAMTTOT |
| Real-Time Reliability Deployment RUC AS Reserve Amount (RTRDRUCRSVAMT) | Effective  06-25-2015  to  12-04-2025 | **RTRDRUCRSVAMT q = (-1) \* (RTRUCRESP q \* RTRDP)**  Where:  The calculation for RTRUCRESP is described in the RTRUCRSVAMT section.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate the total Real-Time RUC AS Reserve amount, for each 15-minute interval of the Operating Day:  RTRDRUCRSVAMTTOT = ( RTRDRUCRSVAMT *q*) | 6.7.5  6.7.6 | Input:  RTRUCRESP  RTRDP  Output:  RTRDRUCRSVAMT  RTRDRUCRSVAMTTOT |
| Real-Time AS Imbalance Revenue Neutrality Allocation (LAASIRNAMT) | Effective  06-01-2014  to  12-04-2025 | **LAASIRNAMT = (-1) \* [(RTASIAMTTOT+ RTRUCRSVAMTTOT) \* LRS q]**  Where:  The calculation for RTASIAMTTOT is described in the RTASIAMT section.  The calculation for RTRUCRSVAMTTOT is described in the RTRUCRSVAMT section. | 6.7.6 | Input:  LRS  RTASIAMTTOT  RTRUCRSVAMTTOT  Output:  LAASIRNAMT |
| Load-Allocated Reliability Deployment AS Imbalance Revenue Neutrality Amount (LARDASIRNAMT) | Effective  06-25-2015  to  12-04-2025 | **LARDASIRNAMT = (-1) \* [(RTRDASIAMTTOT+ RTRDRUCRSVAMTTOT) \* LRS q]**  Where:  The calculation for RTRDASIAMTTOT is described in the RTRDASIAMT section.  The calculation for RTRDRUCRSVAMTTOT is described in the RTRDRUCRSVAMT section. | 6.7.6 | Input:  LRS  RTRDASIAMTTOT  RTRDRUCRSVAMT  Output:  LARDASIRNAMT |
| Real-Time AS Imbalance Amount  (RTRUIMBAMT)  (RTRDIMBAMT)  (RTRRIMBAMT)  (RTNSIMBAMT)  (RTECRIMBAMT) | Effective  12/05/2025  To  Present | Where ‘XX’ is a placeholder for the following AS types (RU, RD, RR, NS, or ECR):  RTXXIMBAMT *q* = (-1) \* [[RTXXREV *q, r* – (1/4) \* (PCXXR *q, r, DAM* \* RTMCPCXX)] – (1/4) \* (DASAXXQ *q* \* RTMCPCXX) + (1/4) \* (XXTP *q* – XXTS *q*) \* RTMCPCXX]  Where:  RTXXREV *q, r* = (1/4) \* RTXXAWD *q, r* \* RTMCPCXXR *q, r* | 6.7.5.1  6.7.5.2  6.7.5.3  6.7.5.4  6.7.5.5  6.7.5.6 | Input:  RTXXAWD  RTMCPCXXR  PCXXR  RTMCPCXX  DASAXXQ  XXTP  XXTS  Intermediate:  RTXXREV  Output:  RTXXIMBAMT  RTXXIMBAMTTOT |
| Real-Time AS Only Amount  (RTRUOAMT)  (RTRDOAMT)  (RTRROAMT)  (RTNSOAMT)  (RTECROAMT) | Effective  12/05/2025  To  Present | Where ‘XX’ is a placeholder for the following AS types (RU, RD, RR, NS, or ECR):  RTXXOAMT *q* = (1/4) \* DAXXOAWD *q* \* RTMCPCXX  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate the total Real-Time AS Only amount, for each 15-minute interval of the Operating Day:  RTXXOAMTTOT= ( RTXXOAMT *q*) | 6.7.5.1  6.7.5.2  6.7.5.3  6.7.5.4  6.7.5.5  6.7.5.6 | Input:  DAXXOAWD  RTMCPCXX  Output:  RTXXOAMT  RTXXOAMTTOT |
| Real-Time AS Trade Overage Amount  (RTRUTOAMT)  (RTRDTOAMT)  (RTRRTOAMT)  (RTNSTOAMT)  (RTECRTOAMT) | Effective  12/05/2025  To  Present | Where ‘XX’ is a placeholder for the following AS types (RU, RD, RR, NS, or ECR):  RTXXTOAMT *q* = (1/4) \* RTXXTO *q* \* RTMCPCXX  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate the total Real-Time AS Trade Overage amount, for each 15-minute interval of the Operating Day:  RTXXTOAMTTOT= ( RTXXTOAMT *q*) | 6.7.5.1  6.7.5.2  6.7.5.3  6.7.5.4  6.7.5.5  6.7.5.6 | Input:  RTXXTO  RTMCPCXX  Output:  RTXXTOAMT  RTXXTOAMTTOT |
| Real-Time AS Revenue Neutrality Allocation  (LARTRUAMT)  (LARTRDAMT)  (LARTRRAMT)  (LARTNSAMT)  (LARTECRAMT) | Effective  12/05/2025  To  Present | Where ‘XX’ is a placeholder for the following AS types (RU, RD, RR, NS, or ECR):  **LARTXXAMT *q* = (-1) \* (RTXXIMBAMTTOT + RTXXOAMTTOT + RTXXTOAMTTOT) \* LRS *q***  Where:  The calculation for RTXXIMBAMTTOT is described in the RTXXIMBAMT section.  The calculation for RTXXOAMTTOT is described in the RTXXOAMT section.  The calculation for RTXXTOAMTTOT is described in the RTXXTOAMT section. | 6.7.6 | Input:  RTXXIMBAMTTOT  RTXXOAMTTOT  RTXXTOAMTTOT  LRS  Output:  LARTXXAMT |
| Real-Time Derated AS Capability Payment  (RTDASAMT) | Effective  12/05/2025  To  Present | **RTDASAMT *q* = (-1) \* Max [0,** **Min [(RTRUILD *q* + RTRDILD *q* + RTRRILD *q* + RTNSILD *q* + RTECRILD *q* – RTEIRD** *q* **– RTASIRD *q*),** **RTDASCAP *q, r*]] + ADJRTDAS *q***  Where:  RTDASCAP *q. r* = (1/4) \* (RTMCPCRU \* RTRUDQ *q, r***+** RTMCPCRD \* RTRDDQ *q, r* **+** RTMCPCRR \* RTRRDQ *q, r* **+** RTMCPCNS \* RTNSDQ *q, r* **+** RTMCPCECR \* RTECRDQ *q, r*)  ADJRTDAS is a business-required adjustment cut, beyond what is in the protocol.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate the total Real-Time Derated AS Capability Payment amount, for each 15-minute interval of the Operating Day:  RTDASAMTTOT = ( RTDASAMT *q*) | 6.7.5.7  6.7.5.8 | Input:  RTRUDQ  RTRDDQ  RTRRDQ  RTNSDQ  RTECRDQ  RTMCPCRU  RTMCPCRD  RTMCPCRR  RTMCPCNS  RTMCPCECR  RTRUILD  RTRDILD  RTRRILD  RTNSILD  RTECRILD  RTEIRD  RTASIRD  ADJRTDAS  Intermediate:  RTDASCAP  Output:  RTDASAMT  RTDASAMTTOT |
| Real-Time Derated AS Capability Charge  (LARTDASAMT) | Effective  12/05/2025  To  Present | **LARTDASAMT *q* = (-1) \* RTDASAMTTOT \* LRS *q***  Where:  The calculation for RTDASAMTTOT is described in the RTDASAMT section. | 6.7.5.8 | Input:  RTDASAMTTOT  LRS  Output:  LARTDASAMT |
| Payment for PTP Obligation with Links to an Option in Real-Time (RTOBLLOAMTQSETOT) | Effective  02-14-2013  to  Present | When the DAM is executed:  RTOBLLOAMT*q, (j, k)* = (-1) \* Max (0, RTOBLPR*(j, k)*) \* RTOBLLO *q, (j, k)*  Where:  RTOBLPR *(j, k)* = (RTSPP *k, i* – RTSPP *j, i*) / 4  The calculation for RTOBLLO is described in the DARTOBLLOAMT section.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate the Real-Time Obligation with Links to an Option Amount QSE Total, for each hour of the Operating Day:  RTOBLLOAMTQSETOT *q* =RTOBLLOAMT *q, (j, k)*  Calculate the total Real-Time Obligation with Links to an Option Amount, for each hour of the Operating Day:  RTOBLLOAMTTOT = RTOBLLOAMTQSETOT *q* | 7.9.2.1  4.6.3  6.6.10 | Input:  RTSPP  RTOBLLO  Intermediate:  RTOBLPR  Output:  RTOBLLOAMT  RTOBLLOAMTQSETOT  RTOBLLOAMTTOT |
| Payments and Charges for PTP Obligations Settled in Real-Time (RTOBLAMT)  (NDRTOBLAMT) | Effective  12-01-2010  to  Present | When DAM is executed:  RTOBLAMT *q, (j, k)* = (-1) \* RTOBLPR *(j, k)* \* RTOBL *q, (j, k)*  Where:  RTOBLPR *(j, k)* = (RTSPP *k, i* – RTSPP *j, i*) / 4  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate the Real-Time Obligation Amount QSE Total, for each hour of the Operating Day:  RTOBLAMTQSETOT *q* =RTOBLAMT *q, (j, k)*  Calculate the total Real-Time Obligation Amount, for each hour of the Operating Day:  RTOBLAMTTOT =RTOBLAMTQSETOT*q*  In the event that ERCOT is unable to execute the DAM:  NDRTOBLAMT *o, (j, k)* = (-1) \* RTOBLPR *(j, k)* \* DAOBL *o, (j, k)*  Where:  RTOBLPR *(j, k)* = (RTSPP *k, i* – RTSPP *j, i*) / 4  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate the No DAM Real-Time Obligation Amount Owner Total, for each hour of the Operating Day:  NDRTOBLAMTOTOT *o* = NDRTOBLAMT *o, (j, k)*  Calculate the total No DAM Real-Time Obligation Amount, for each hour of the Operating Day:  NDRTOBLAMTTOT =NDRTOBLAMTOTOT*o* | 7.9.2.1  6.6.10 | Input:  RTSPP  RTOBL  DAOBL  Intermediate:  RTOBLPR  Output:  RTOBLAMT  RTOBLAMTQSETOT  RTOBLAMTTOT  NDRTOBLAMT  NDRTOBLAMTOTOT  NDRTOBLAMTTOT |
| Payments for PTP Options Settled in Real-Time (NDRTOPTAMT) | Effective  02-14-2013  to  Present | When the DAM is not executed:  NDRTOPTAMT *o, (j, k)* = (-1) \* NDRTOPTTP *o, (j, k)*  Where:  NDRTOPTTP*o, (j, k)* = RTOPTPR*(j, k)* \* OPT*o, (j, k)*  RTOPTPR*(j, k)* =Max (0, RTSPP*k, i* – RTSPP*j, i*) / 4  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate the No DAM Real-Time Option Amount Owner Total, for each hour of the Operating Day:  NDRTOPTAMTOTOT *o* = NDRTOPTAMT *o, (j, k)*  Calculate the total No DAM Real-Time Option Amount, for each hour of the Operating Day:  NDRTOPTAMTTOT =NDRTOPTAMTOTOT*o* | 7.9.2.2  6.6.10 | Input:  RTSPP  OPT  IntermediateL  NDRTOPTTP  RTOPTPR  Output :  NDRTOPTAMT  NDRTOPTAMTOTOT  NDRTOPTAMTTOT |
| Payments for NOIE PTP Options with Refund Settled in Real-Time (NDRTOPTRAMT) | Effective  02-14-2013  to  Present | When the DAM is not executed:  NDRTOPTRAMT *o, (j, k)* = (-1) \* NDRTOPTRTP *o, (j, k)*  Where:  NDRTOPTRTP*o, (j, k)* = RTOPTPR *(j, k)* \* Min (OPTR *o, (j, k)*, OPTRACT *o, (j, k)*)  RTOPTPR *(j, k)* = Max (0, RTSPP *k, i* – RTSPP *j, i*) / 4  OPTRACT*o, (j, k)* = (OPTROF*o, r* \* RESACT *r* \* OPTRF *o, r, (j, k)*)  If TWOSFLAG *r* = 1 then:  RESACT *r* = TWOSQ *r*  Otherwise  RESACT *r* = TGFTH *r*  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate the No DAM Real-Time Option with Refund Amount Owner Total, for each hour of the Operating Day:  NDRTOPTRAMTOTOT *o* = NDRTOPTRAMT *o, (j, k)*  Calculate the total No DAM Real-Time Option with Refund Amount, for each hour of the Operating Day:  NDRTOPTRAMTTOT = NDRTOPTRAMTOTOT *o* | 7.9.2.3  6.6.10 | Input:  RTSPP  OPTR  OPTRF  TWOSFLAG  TWOSQ  TGFTH  Intermediate:  RESACT  OPTROF  OPTRACT  RTOPTPR  NDRTOPTRTP  Output:  NDRTOPTRAMT  NDRTOPTRAMTOTOT  NDRTOPTRAMTTOT |
| Payments and Charges for PTP Obligations with Refund in Real-Time  (NDRTOBLRAMT) | Effective  12-01-2010  to  Present | When the DAM is not executed:  NDRTOBLRAMT *o, (j, k)* = (-1) \* NDRTOBLRTP *o, (j, k)*  Where:  NDRTOBLRTP *o, (j, k)* = RTOBLPR *(j, k)* \* Min (DAOBLR *o, (j, k),* OBLRACT *o, (j, k)*)  RTOBLPR *(j, k)* = (RTSPP *k, i* – RTSPP *j, i*) / 4  OBLRACT *o, (j, k)* = (OBLROF *o, r* \* RESACT *r* \* OBLRF *o, r, (j, k)*)  If TWOSFLAG *r* = 1 then:  RESACT *r* = TWOSQ *r*  Otherwise  RESACT *r* = TGFTH *r*  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate the No DAM Real-Time Obligation with Refund Amount Owner Total, for each hour of the Operating Day:  NDRTOBLRAMTOTOT *o* = NDRTOBLRAMT *o, (j, k)*  Calculate the total No DAM Real-Time Obligation with Refund Amount, for each hour of the Operating Day:  NDRTOBLRAMTTOT = NDRTOBLRAMTOTOT *o* | 7.9.2.5  6.6.10 | Input:  RTSPP  DAOBLR  OBLRF  TWOSFLAG  TWOSQ  TGFTH  Intermediate:  RESACT  OBLROF  OBLRACT  RTOBLPR  NDRTOPTRTP  Output:  NDRTOBLRAMT  NDRTOBLRAMTOTOT  NDRTOBLRAMTTOT |
| ERCOT System Administration Charge  (ESACAMT) | Effective  05-11-2017  to  Present | **ESACAMT *q* =** LAFF \* Max (0,RTAML *q, p***)** | 9.16.1 | Input:  LAFF  RTAML  Output:  ESACAMT |

# Other Calculations

| **Calculation** | **Effective Dates** | **Protocol Formula** | **Protocol Sec.** | **Bill Determinants** |
| --- | --- | --- | --- | --- |
| OSA Make-Whole Cost  (OSAMW)  Miscellaneous Invoice | Effective  07-01-2020  To  Present | OSAMW *q, r, d* = (Max (0, (RTSPP *i*– MOC *q, r, h*)) \* HSL *q, r, h* \* (¼)) | 5.6.5.2  5.6.5.3 | Input:  RTSPP  MOC  HSL  Output:  OSAMW |
| Collection of RMR Capital Expenditures and Over Payments (RMRRAMT)  Miscellaneous Invoice | Effective  04-05-2019  To  Present | The one-time charge to the QSE to collect the lump sum of over-payments and contributed capital expenditures is calculated as follows:  RMRRAMT *q, r, c* = RMRCE *q, r, c* + RMROP *q, r, c, m*  Where:  ‘*m*’ = A month in the RMR Agreement period.  ‘*c*’ = An RMR Agreement. | 6.6.6.6 | Input:  RMRCE  RMROP  Output:  RMRRAMT |
| Distribution of RMR Capital Expenditures and Over Payments (LARMRRAMT)  Miscellaneous Invoice | Effective  04-05-2019  To  Present | The one-time payment is calculated as follows:  LARMRRAMT *q* = (-1) \*  (MRMRCE *m +* RMROP *q, r, c, m*)/ MH *m* \* HLRS *q, m*  Where:  MRMRCE *m* =  RMRCE *q, r, c* / CM *q, r, c*  Where:  ‘*m*’ = A month in the RMR Agreement period.  ‘*c*’ = An RMR Agreement. | 6.6.6.6 | Input:  RMRCE  RMROP  CM  MH  HLRS  Intermediate:  MRMRCE  Output:  LARMRRAMT |
| Distribution of RMR Miscellaneous Expenses (LARMROEIAMT)  Miscellaneous Invoice | Effective  04-05-2019  To  Present | The one-time charge is calculated as follows:  LARMROEIAMT *q* = (-1) \*  RMROEIAMT *m* / MH *m* \* HLRS *q, m*  Where:  ‘*m*’ = A month in the RMR Agreement period. | 6.6.6.6(2) | Input:  RMROEIAMT  MH  HLRS    Output:  LARMROEIAMT |
| Switchable Generation  Make-Whole Payment (SWMWAMT)  Miscellaneous Invoice | Effective  06-10-2020  To  12-04-2025 | SWMWAMT *q, r* = (-1) \* Max (0, (SWCG *q, r, d* – SWRTREV *q, r, d*)) / SWIHR *q, r, d*  Where:  SWCG *q, r, d* = SWSUC *q, r, d* + SWMEC *q, r, d* + SWOC *q, r, d* + SWAC *q, r, d* + SWPSLR *q, r, d*  SWRTREV *q, r, d* = Max [0, (RTSPP*p, i* \* RTMG*q, r, i* + (-1) \* (EMREAMT *q, r, p, i*  + VSSVARAMT *q, r, i*+ VSSEAMT *q, r, i*) + Max(0, (RTOLHSLRA *q, r, p, i* – RTMGA *q, r, p, i*) \* (RTRSVPOR *i* + RTRDP *i*)))]  SWAC *q, r, d* = SWFC *q, r, d* + SWEIC *q, r, d* + SWASIC *q, r, d* + SWMWDC *q, r, d* + SWFIPC *q, r, d*  SWPSLR *q, r, d* = (RTSPP*p, i* \* RTLPX *q, r, i*) – (FIP+FA) \* SFC *d*  If ERCOT has approved verifiable costs for the SWGR:  SWSUC *q, r, d* =  [SWSF \* (DAFCRS *r, s* \* (GASPERSU *r, s* \* FIP + OILPERSU *r, s* \* FOP + SFPERSU *r, s* \* SFP) + VOMS *r, s*)] + ADJSWSUC *q, r, d*  SWMEC *q, r, d* = ((AHR *r, i* \* (GASPERME *r* \* FIP + OILPERME *r* \* FOP + SFPERME *r*\* SFP + FA *r*) + VOMLSL *r*) \* Min (LSL *q, r, i* \* (¼), RTMG *q, r, i*))  SWOC *q, r, d* = [(AHR *r, i* \* ((GASPEROL *r* \* FIP + OILPEROL *r* \* FOP + SFPEROL *r* \* SFP) + FA *r*) + OM *r*) \* Max (0, (RTMG *q, r, i* – LSL *q, r, i* \* (¼)))]  If ERCOT has not approved verifiable costs for the SWGR:  SWSUC *q, r, d* =  (SWSF \* RCGSC *s, rc*) + ADJSWSUC *q, r, d*  SWMEC *q, r, d* = (RCGMEC *i, rc* \* Min (LSL *q, r, i* \* (¼), RTMG *q, r, i*))  SWOC *q, r, d* = ((PAHR *r, i* \* FIP + STOM *rc*) \* Max (0, (RTMG *q, r, i* – LSL *q, r, i* \* (¼)))) *-* OPC *r, d*  Where,  OPC *r,d* = ((PAHR *r, i* \* FIP + STOM *rc*) \* AENG *r, i*)  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate the Switchable Generation Make-Whole payment QSE Total, for each hour of the Operating Day:  SWMWAMTQSETOT *q* = SWMWAMT *q, r* | 6.6.12.1  6.6.12.3 | Input:  SWIHR  RTSPP  RTMG  EMREAMT  VSSVARAMT  VSSEAMT  RTOLHSLRA  RTMGA  RTRSVPOR  RTRDP  SWFC  SWEIC  SWASIC  SWMWDC  SWFIPC  RTLPX  SFC  SWSF  DAFCRS  GASPERSU  OILPERSU  SFPERSU  VOMS  FA  FIP  FOP  SFP  ADJSWSUC  AHR  GASPERME  OILPERME  SFPERME  VOMLSL  LSL  GASPEROL  OILPEROL  SFPEROL  OM  RCGSC  RCSMEC  PAHR  STOM  AENG  Intermediate:  SWCG  SWRTREV  SWAC  SWSUC  SWMEC  SWOC  SWPSLR  OPC  Output:  SWMWAMT  SWMWAMTQSETOT |
| Switchable Generation  Make-Whole Payment (SWMWAMT)  Miscellaneous Invoice | Effective  12-05-2025  To  Present | SWMWAMT *q, r* = (-1) \* Max (0, (SWCG *q, r, d* – SWRTREV *q, r, d*)) / SWIHR *q, r, d*  Where:  SWCG *q, r, d* = SWSUC *q, r, d* + SWMEC *q, r, d* + SWOC *q, r, d* + SWAC *q, r, d* + SWPSLR *q, r, d*  SWRTREV *q, r, d* = Max [0, (RTSPP*p, i* \* RTMG*q, r, i* + (-1) \* (EMREAMT *q, r, p, i*  + VSSVARAMT *q, r, i*+ VSSEAMT *q, r, i*) + RTRUREV *q, r, i* + RTRDREV *q, r, i*  + RTRRREV *q, r, i*  + RTNSREV *q, r, i*  + RTECRREV *q, r, i*)]  SWAC *q, r, d* = SWFC *q, r, d* + SWEIC *q, r, d* + SWASIC *q, r, d* + SWMWDC *q, r, d* + SWFIPC *q, r, d*  SWPSLR *q, r, d* = (RTSPP*p, i* \* RTLPX *q, r, i*) – (FIP+FA) \* SFC *d*  If ERCOT has approved verifiable costs for the SWGR:  SWSUC *q, r, d* =  [SWSF \* (DAFCRS *r, s* \* (GASPERSU *r, s* \* FIP + OILPERSU *r, s* \* FOP + SFPERSU *r, s* \* SFP) + VOMS *r, s*)] + ADJSWSUC *q, r, d*  SWMEC *q, r, d* = ((AHR *r, i* \* (GASPERME *r* \* FIP + OILPERME *r* \* FOP + SFPERME *r*\* SFP + FA *r*) + VOMLSL *r*) \* Min (LSL *q, r, i* \* (¼), RTMG *q, r, i*))  SWOC *q, r, d* = [(AHR *r, i* \* ((GASPEROL *r* \* FIP + OILPEROL *r* \* FOP + SFPEROL *r* \* SFP) + FA *r*) + OM *r*) \* Max (0, (RTMG *q, r, i* – LSL *q, r, i* \* (¼)))]  If ERCOT has not approved verifiable costs for the SWGR:  SWSUC *q, r, d* =  (SWSF \* RCGSC *s, rc*) + ADJSWSUC *q, r, d*  SWMEC *q, r, d* = (RCGMEC *i, rc* \* Min (LSL *q, r, i* \* (¼), RTMG *q, r, i*))  SWOC *q, r, d* = ((PAHR *r, i* \* FIP + STOM *rc*) \* Max (0, (RTMG *q, r, i* – LSL *q, r, i* \* (¼)))) *-* OPC *r, d*  Where,  OPC *r,d* = ((PAHR *r, i* \* FIP + STOM *rc*) \* AENG *r, i*)  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Calculate the Switchable Generation Make-Whole payment QSE Total, for each hour of the Operating Day:  SWMWAMTQSETOT *q* = SWMWAMT *q, r* | 6.6.12.1  6.6.12.3 | Input:  SWIHR  RTSPP  RTMG  EMREAMT  VSSVARAMT  VSSEAMT  RTRUREV  RTRDREV  RTRRREV  RTNSREV  RTECRREV  SWFC  SWEIC  SWASIC  SWMWDC  SWFIPC  RTLPX  SFC  SWSF  DAFCRS  GASPERSU  OILPERSU  SFPERSU  VOMS  FA  FIP  FOP  SFP  ADJSWSUC  AHR  GASPERME  OILPERME  SFPERME  VOMLSL  LSL  GASPEROL  OILPEROL  SFPEROL  OM  RCGSC  RCSMEC  PAHR  STOM  AENG  Intermediate:  SWCG  SWRTREV  SWAC  SWSUC  SWMEC  SWOC  SWPSLR  OPC  Output:  SWMWAMT  SWMWAMTQSETOT |
| Switchable Generation  Make-Whole Charge  (LASWMWAMT)  Miscellaneous Invoice | Effective 05-31-2019 to Present | LASWMWAMT *q* = (-1) \* SWMWAMTTOT \* HLRS *q*  Where:  SWMWAMTTOT =  SWMWAMTQSETOT *q* | 6.6.12.2  6.6.12.3 | Input:  SWMWAMTQSETOT  HLRS  Intermediate:  SWMWAMTTOT  Output:  LASWMWAMT |
| Credit to CRR Balancing Account  (CRRBACR) | Effective  12/01/2010  to  Present | CRRBACR = Max (0, (DACONGRENT + DACRRCRTOT + DACRRCHTOT))  Where:  The calculation for DACONGRENT is described in the DACRRSAMT section.  The calculation for DACRRCRTOT is described in the DACRRSAMT section.  The calculation for DACRRCHTOT is described in the DACRRSAMT section. | 7.9.3.2 | Input:  DACONGRENT  DACRRCRTOT  DACRRCHTOT  Output:  CRRBACR |
| CRR Refund Amount  (CRRRAMT)  CRR Balancing Acct. Invoice | Effective  2/10/2016  to  Present | IF CRRBACRTOT + CRRFEETOT < CRRSAMTTOT then:  CRRRAMT *o* = (-1) \* Min (CRRBACRTOT + CRRFEETOT + CRRBAFA *m*, CRRSAMTTOT) \* CRRSAMTRS *o*  Where:  CRRBAFA *m*= Min (CRRBAFBBAL, CRRSAMTTOT – (CRRBACRTOT + CRRFEETOT))  Otherwise;  Otherwise:  CRRRAMT *o* = (-1) \* Min (CRRBACRTOT + CRRFEETOT, CRRSAMTTOT) \* CRRSAMTRS *o*  Where:  CRRBACRTOT=CRRBACR *h*  CRRFEETOT=  (OPTAFAMT *crrh, a*)  If (CRRSAMTTOT = 0) then,  CRRSAMTRS *o*= 0  Otherwise  CRRSAMTRS *o*= CRRSAMTOTOT *o* / CRRSAMTTOT  Where:  CRRSAMTTOT =CRRSAMTOTOT *o*  CRRSAMTOTOT *o*=DACRRSAMT *o, h* | 7.9.3.4 | Input:  CRRBACR  OPTAFAMT  CRRSAMTOTOT  DACRRSAMT  Intermediate:  CRRSAMTOTOT  CRRSAMTTOT  CRRSAMTRS  CRRFEETOT  CRRBACRTOT  CRRBAFA  Output:  CRRRAMT |
| Load-Allocated CRR Amount  (LACRRAMT)  CRR Balancing Acct. Invoice |  | LACRRAMT *q* = (-1) \* Max ((CRRBACRTOT + CRRFEETOT + CRRRAMTTOT) - (FUNDCAP- CRRBAFBBAL), 0) \* MLRS *q*  Where:  CRRRAMTTOT=CRRRAMT *o*  FUNDCAP value is specified by Protocols.  For Initial distribution of the CRRBA, the MLRS used shall be the RTM\_Initial MLRS.  For Final distribution of the CRRBA, the MLRS used shall be the RTM\_Final MLRS.  The MLRS used for the Resettlement of the CRRBA will be the same one used for the most recently posted balancing account Invoices for the Month. | 7.9.3.5 | Input:  CRRRAMT  FUNDCAP  CRRBACRTOT  CRRFEETOT  CRRRAMTTOT  CRRBAFBBAL  MLRS  Intermediate:  CRRRAMTTOT  Output:  LACRRAMT |
| CRR Revenue per Auction  Zonal (CRRZREV)  Non-Zonal (CRRNZREV)  CARD Invoice | Effective  12/01/2010  to  Present | Zonal Revenue:  CRRZREV *z, a* = (OBLSAMTZTOT *z, a, h* + OPTSAMTZTOT *z, a, h* + OBLPAMTZTOT *z, a, h* + OPTPAMTZTOT *z, a, h*)  Non-Zonal Revenue:  CRRNZREV *a* =  (OBLSAMTNZTOT *a, h* + OPTSAMTNZTOT *a, h* + OBLPAMTNZTOT *a, h* + OPTPAMTNZTOT *a, h*) | 7.5.6.4 | Input:  OBLSAMTZTOT  OPTSAMTZTOT  OBLPAMTZTOT  OPTPAMTZTOT  OBLSAMTNZTOT  OPTSAMTNZTOT  OBLPAMTNZTOT  OPTPAMTNZTOT  Output:  CRRZREV  CRRNZREV |
| PCRR Revenue per Auction  Zonal (PCRRZREV)  Non-Zonal (PCRRNZREV)  CARD Invoice | Effective  12/01/2010  to  Present | Zonal Revenue:  PCRRZREV *z, a* = (PCRROBLAMTZTOT *z, a, h* + PCRROPTAMTZTOT *z, a, h*)  Non-Zonal Revenue:  PCRRNZREV *a* = (PCRROBLAMTNZTOT *a, h* + PCRROPTAMTNZTOT *a, h*) | 7.5.6.4 | Input:  PCRROBLAMTZTOT  PCRROPTAMTZTOT  PCRROBLAMTNZTOT  PCRROPTAMTNZTOT  Output:  PCRRZREV  PCRRNZREV |
| Load-Allocated CRR Monthly Revenue Zonal Amount  (LACMRZAMT)  CARD Invoice | Effective  12/01/2010  to  Present | LACMRZAMT *q, z* = (-1) \* (CRRZREV *z, a* + PCRRZREV *z, a*) \* MLRSZ *q, z* | 7.5.7 | Input:  CRRZREV  PCRRZREV  MLRSZ  Output:  LACMRZAMT |
| Load-Allocated CRR Monthly Revenue Non-Zonal Amount  (LACMRNZAMT)  CARD Invoice | Effective  12/01/2010  to  Present | LACMRNZAMT *q* = (-1) \* (CRRNZREV *a* + PCRRNZREV *a*) \* MLRS *q* | 7.5.7 | Input:  CRRNZREV  PCRRNZREV  MLRS  Output:  LACMRNZAMT |
| Load-Allocated Securitization Uplift Charge  (LASUCAMT)  Securitization Uplift Invoice | Effective  07-05-2022  to  Present | LASUCAMT*q, d* = SUCDA*d* \* DQSELSELRS*q, d* | 27.3 | Input:  SUCDA  DQSELSELRS  Output:  LASUCAMT |

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# Bill Determinant Definitions

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| **Variable** | **Unit** | **Definition** |
| AABP | MW | Adjusted Aggregated Base Point per QSE per Settlement Point per Resource—The aggregated Base Point adjusted for Ancillary Service deployments, of Generation Resource R represented by QSE Q at Resource Node SP, for the 15-minute Settlement Interval. |
| AASP | MW | Average Aggregated Set Point per QSE per Settlement Point per Resource - The average of the Average Five Minute Clock Interval Set Point (AVGSP5M) of Resource r represented by QSE q at Settlement Point p, for the 15-minute Settlement Interval i. |
| ADJBPD | $ | Adjustment to Base Point Deviation Amount - The dollar adjustment to the Base Point Deviation Amount for a Resource at a Settlement Point represented by a QSE, for the Operating Day. |
| ADJDAMW | $ | Adjustment to Day-Ahead Make-Whole Amount —The dollar adjustment to the Day Ahead Make Whole Amount for a Resource for the Operating Day. |
| ADJEMRE | $ | Adjustment to Emergency Amount –The dollar adjustment to Emergency Energy Amount for the QSE for the Resource at the Resource Node for the 15-minute Settlement Interval. |
| ADJFFSS | $ | Adjustment to Firm Fuel Supply Service Amount – The dollar adjustment to the Firm Fuel Supply Service Amount for a Resource r represented by a QSE q, for the Operating Day. |
| ADJRTASI | $ | Adjustment to Real-Time Ancillary Service Imbalance - The dollar adjustment to the Real-Time Ancillary Service Imbalance amount for a QSE for each 15-minute Settlement Interval. |
| ADJRTDAS | $ | Adjustment to Real-Time Derated Ancillary Service Amount — The dollar adjustment to the Real-Time Derated Ancillary Service Amount for a QSE, for the 15-minute Settlement Interval. |
| ADJRUCD | $ | Adjustment to RUC Decommitment Amount - The dollar adjustment to the RUC Decommitment Payment for a Generation Resource for the contiguous decommitted period within the Operating Day. |
| ADJRUCG | $ | Adjustment to RUC Guarantee - The dollar adjustment to the RUC Guaranteed Amount for a Generation Resource for the Operating Day. |
| ADJSPD | $ | Adjustment to Set Point Deviation Amount - The dollar adjustment to the Set Point Deviation Amount for a Resource at a Settlement Point represented by a QSE for the Operating Day. |
| ADJSWSUC | $ | Adjustment to Switchable Generation Start-Up Cost — Adjustment to Switchable Generation Startup Cost for Resource r represented by QSE q, for the Operating Day d. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. This adjustment may include eligible startup transition costs for a Combined Cycle Train or costs for any SWGR not captured in other billing determinants. |
| ADJVSS | $ | Adjustment to Voltage Support Payment – The dollar adjustment to the Voltage Support Payment for a QSE Q for an interval. |
| ADJVSSE | $ | Adjustment to Voltage Energy Payment – The dollar adjustment to the Voltage Energy Payment for a QSE Q for an interval. |
| AEBP | MW | Aggregated Emergency Base Point— The Generation Resource’s aggregated Emergency Base Point, for the 15-minute Settlement Interval. |
| AEBPGEN | MWh | Aggregated Emergency Base Point for Generation—The aggregation of the positive Emergency Base Points for the Resource r represented by QSE q, for the 15-minute Settlement Interval. Where for a Combined Cycle Train, AEBP is calculated for the Combined Cycle Train considering all emergency Dispatch Instructions to any Combined Cycle Generation Resources within the Combined Cycle Train. |
| AEBPLOAD | MWh | Aggregated Emergency Base Point for Charging Load—The aggregation of the negative Emergency Base Points for the Resource r represented by QSE q, for the 15-minute Settlement Interval. |
| AFCRS | MMBtu/Start | Actual Fuel Consumption Rate per Start—The actual fuel consumption rate per start type for the Resource and submitted to ERCOT through the Verifiable Costs process. |
| AGRMAXON | None | Aggregate Generation Resource Maximum Online per QSE per Settlement Point per Aggregate Generation Resource–The maximum number of generators online during an hour, as indicated by telemetry. The value is only applicable if the Resource is an AGR. |
| AGRRATIO | None | Aggregate Generation Resource Ratio per QSE per Settlement Point per Aggregate Generation Resource– A value which represents the ratio of the maximum number of generators online during an hour, as indicated by telemetry, compared to the total number of generators registered to the AGR and used in the approved verifiable cost for the AGR. The value is only applicable if the Resource is an AGR. |
| AGRTOT | None | Aggregate Generation Resource Total per QSE per Settlement Point per Aggregate Generation Resource– The total number of generators registered to the AGR and used in the approved verifiable cost for the AGR. The value is only applicable if the Resource is an AGR. |
| AHR | MMBtu/MWh | Average Heat Rate per Resource– The verifiable average heat rate for the Resource r, for the operating level, for the 15-minute Settlement Interval i. Where for a Combined Cycle Train, the Resource r is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| ASMWCAPUQADJ | MW | Calculated Total MW Capacity used to cover the QSE’s Ancillary Service Position at End of Adjustment Period—The calculated total MW capacity for a QSE q that represents the amount of the QSE’s Ancillary Service Position covered by its Resources at the end of Adjustment Period for the hour h that includes the 15-minute Settlement Interval. |
| ASMWCAPUQSNAP | MW | Calculated Total MW Capacity used to cover the QSE’s Ancillary Service Position at Snapshot—The calculated total MW capacity for a QSE q that represents the amount of the QSE’s Ancillary Service Position covered by its Resources for the RUC process ruc for the hour h that includes the 15-minute Settlement Interval. |
| ASOFFOFRADJ | MW | Ancillary Service Offline Offers at End of Adjustment Period –The capacity represented by validated Ancillary Service Offers for Non-Spin for Resource r with COP status of “OFF”, represented by QSE q at the end of the Adjustment Period for the hour h that includes the 15-minute Settlement Interval. Where for a Combined Cycle Train, the Resource r is a Combined Cycle Generation Resource within the Combined Cycle Train. A Resource’s offered capacity is only included in the sum to the extent that the Resource’s COP Status and Ancillary Service Capability indicate it would be capable of providing the Ancillary Service during the hour h. |
| ASOFFOFRSNAP | MW | Ancillary Service Offline Offers at Snapshot –The capacity represented by validated Ancillary Service Offers for Non-Spin for Resource r with COP status of “OFF”, represented by QSE q according to the RUC Snapshot for the RUC process ruc for the hour h that includes the 15-minute Settlement Interval. Where for a Combined Cycle Train, the Resource r is a Combined Cycle Generation Resource within the Combined Cycle Train. A Resource’s offered capacity is only included in the sum to the extent that the Resource’s COP Status and Ancillary Service Capability indicate it would be capable of providing the Ancillary Service during the hour h. |
| ASOFRLRADJ | MW | Ancillary Service Offer per Load Resource at End of Adjustment Period – The capacity represented by validated Ancillary Service Offers for Reg-Up, Non-Spin, RRS, and ECRS for the Load Resource r represented by QSE q at the end of the Adjustment Period for the hour h that includes the 15-minute Settlement Interval. A Resource’s offered capacity is only included in the sum to the extent that the Resource’s COP Status and Ancillary Service Capability indicate it would be capable of providing the Ancillary Service during the hour h. |
| ASOFRLRSNAP | MW | Ancillary Service Offer per Load Resource at Snapshot – The capacity represented by validated Ancillary Service Offers for Reg-Up, Non-Spin, RRS, and ECRS for the Load Resource r represented by QSE q according to the RUC Snapshot for the RUC process ruc for the hour h that includes the 15-minute Settlement Interval. A Resource’s offered capacity is only included in the sum to the extent that the Resource’s COP Status and Ancillary Service Capability indicate it would be capable of providing the Ancillary Service during the hour h. |
| ASONPOSADJ | MW | Ancillary Service On-Line Position at End of Adjustment Period – The QSE q’s total On-Line Ancillary Service position at the end of the Adjustment Period for the 15-minute Settlement Interval i. |
| ASONPOSSNAP | MW | Ancillary Service On-Line Position at Snapshot – The QSE q’s total On-Line Ancillary Service position according to the RUC Snapshot for the RUC process ruc for the 15-minute Settlement Interval i. |
| ATPC | MWh | Average Telemetered Power Consumption per QSE per Settlement Point per Controllable Load Resource—The telemetered power consumption of the Controllable Load Resource r represented by QSE q at Resource Node p, for the 15-minute Settlement Interval i. |
| AVCAP | MW | Available Capacity per Resource by hour – The available capacity of Resource r represented by QSE q as calculated for the hour. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| AVGHASL | MW | Average High Ancillary Service Limit per QSE per Settlement Point per Resource—The time-weighted average High Ancillary Service Limit (HASL) calculated every four seconds by the Resource Limit Calculator for the Generation Resource or Controllable Load Resource r represented by QSE q at Settlement Point p within the 15-minute Settlement Interval i. |
| AVGHDL | MW | Average High Dispatch Limit per QSE per Settlement Point per Resource—The time-weighted average of all 4-second HDL values calculated by the Resource Limit Calculator, subject to the manual HDL override, for the Generation Resource or Controllable Load Resource r represented by QSE q at Settlement Point p within the 15-minute Settlement Interval i. |
| AVGHSL | MW | Average High Sustained Limit per QSE per Settlement Point per Resource—The time-weighted average High Sustained Limit (HSL) for the Generation Resource or Controllable Load Resource *r* represented by QSE *q* at Settlement Point *p* within the 15-minute Settlement Interval.  For a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| AVGRTASIP | $/MW/Hr | Average Real-Time Ancillary Service Imbalance Price—The average of the sum of the Real-Time On-Line Reliability Deployment Price and the Real-Time Reserve Price for On-Line Reserves used in the calculation of Real Time Ancillary Service Imbalance Amount for the hour. |
| AVGTLSL | MW | Average Telemetered Low Sustainable Limit – The simple average of all 5-minute Telemetered Low Sustainable Limit data for the 15-minute settlement interval. |
| BLTR | MWh | Block Load Transfer Resource per QSE per Settlement Point per BLT Point—The energy delivered to an ERCOT Load in Load Zone p through BLT Point bltp represented by QSE q, for the 15-minute Settlement Interval. |
| BLTRAMT | $ | Block Load Transfer Resource Amount per QSE per Settlement Point per BLT Point—The payment to QSE q for the BLT Resource that delivers energy to Load Zone p through BLT Point bltp, for the 15-minute Settlement Interval. |
| BLTRAMTQSETOT | $ | Block Load Transfer Resource Amount QSE Total per QSE—The total of the payments to QSE q for energy delivered into the ERCOT System through BLT Points for the 15-minute Settlement Interval. |
| BLTRAMTTOT | $ | Block Load Transfer Resource Amount Total—The total of the payments for energy delivered into the ERCOT System through BLT Points for the 15-minute Settlement Interval. |
| BP | MW | Base Point per Resource per interval - The Base Point of Resource r at Resource Node p represented by QSE q from the SCED prior to the Emergency Condition or Watch. Where for a Combined Cycle Train, the Resource r is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| BPDAMT | $ | Base Point Deviation Charge per QSE per Settlement Point per Resource—The charge to QSE Q for Generation Resource R at Resource Node SP, for its deviation from Base Point, for the 15-minute Settlement Interval. |
| BPDAMTQSETOT | $ | Base-Point Deviation Amount QSE Total per QSE - The total of Base-Point Deviation Charges to QSE q for all Generation Resources represented by this QSE, for the 15 minute Settlement Interval. |
| BPDAMTTOT | $ | Base-Point Deviation Amount Total-The total of Base-Point Deviation Charges to all QSEs for all Generation Resources, for the 15 minute Settlement Interval |
| BSSAFLAG | None | Black Start Service Availability Flag per QSE per Resource by hour—The flag of the availability of BSS Resource R represented by QSE Q, 1 for available and 0 for unavailable, for the hour h. |
| BSSAMT | $ | Black Start Service Amount per QSE per Resource by hour—The standby payment to QSE Q for the Black Start Service (BSS) provided by Resource R, for the hour h. |
| BSSAMTQSETOT | $ | Black Start Service Amount QSE Total per QSE — The total of the payments to QSE Q for BSS provided by all the BSS Resource represented by this QSE for the hour h. |
| BSSAMTTOT | $ | Black Start Service Amount QSE Total ERCOT-Wide — The total of payments to QSE Q for BSS provided by all the BSS Resource represented by this QSE for the hour h. |
| BSSARF | None | Black Start Service Availability Reduction Factor per QSE per Resource by hour—The availability reduction factor of Resource R represented by QSE Q under the BSS Agreement, for the hour h. |
| BSSEH | None | Black Start Service Elapsed number of Hours per QSE per Resource by hour—The number of the elapsed hours of BSS Resource R represented by QSE Q since the beginning of the BSS Agreement, for the hour h. |
| BSSHREAF | None | Black Start Service Hourly Rolling Equivalent Availability Factor per QSE per Resource by hour—The equivalent availability factor of the BSS Resource R represented by QSE Q over 4380 hours, for the hour h. |
| BSSPR | $/Hr | Black Start Service Price per QSE per Resource—The standby price of BSS Resource R represented by QSE Q, as specified in the BSS Agreement. |
| BUYBACK | Misc | RUC Buyback Flag — The flag that indicates if a QSE successfully opted out of a RUC-Commitment for its RUC-Committed Resource. The hourly value will equal one <1> when the Buyback attempt is successful, two <2> when the Buyback attempt is not successful or no attempt is made and zero <0> for hours that are not RUC-Committed. |
| CAPEFLAG | Misc | Capacity Exclusion Flag - Resource level cut that flags intervals that should be excluded from the calculation of Real Time Online Capacity for the QSE per PR 6.7.4 (3) (4) |
| CAVCAP | MW | Cumulated Available Capacity per QSE per Resource for the current operating hour based on the data of the previous 1.451 hours within the obligation start date and obligation stop date. |
| CCTS | Misc | Combined-CycleTelemetered Status Flag - The flag that indicates the Configuration in which the Combined Cycle Train operates in Real-Time, for the 15-minute Settlement Interval, based on each telemetered configuration change as determined by EMS. If the Configuration is operated in Real-Time for the interval, its value is one <1>; otherwise, zero <0>. |
| CLRASFLAG | Misc | CLRASFLAG – Flag that indicates that the Controllable Load Resource has Ancillary Service responsibility. Its value will be one (1) for each 15-minute Settlement Interval when the Resource has Ancillary Service responsibility. Otherwise, (0). |
| CLRDISPFLAG | Misc | CLRDISPFLAG – Flag that indicates the computed Base Point is equal to the snapshot of its telemetered power consumption for all SCED runs during the Settlement Interval. (1) when true, otherwise (0). |
| CRRBACR | $ | CRR Balancing Account Credit per hour—The credit to the CRR Balancing Account for the hour h. |
| CRRBACRTOT | $ | CRR Balancing Account Credit Total—The total of credits accumulated in the CRR Balancing Account for all Operating Hours in the month. |
| CRRBAFBBAL | $ | CRR Balancing Account Fund Beginning Balance—The amount in the CRR Balancing Account Fund at the previous Settlement. |
| CRRCRRSDA | none | CRR Credit Ratio Share Day-Ahead per owner—The ratio of the total payments to CRR Owner o of its CRRs settled in the DAM to the total payments to all CRR Owners of all CRRS, for the hour. |
| CRRFEETOT | $ | CRR Auction Fee Total—The sum of the PTP Option Award Fees charged to all CRR Account Holder in single-month or multi-month CRR Auctions for the month |
| CRRNZREV | None | Calculate CRR non-Zonal Revenue per CRR Auction for PTP Obligations and PTP Options for which source and sink are located in multiple 2003 ERCOT CMZ’s, cleared in each CRR Auction |
| CRRRAMT | $ | CRR Refund Amount per owner—The refund to the short-paid CRR Owner o for the month. |
| CRRSAMTOTOT | $ | CRR Shortfall Amount Owner Total per owner—The total of shortfall charges to CRR Owner o for all Operating Hours in the month. |
| CRRSAMTRS | none | CRR Shortfall Amount Ratio Share per owner—The ratio of the CRR Owner o’s total shortfall-charge to the total of all the CRR Owners’ shortfall charges, for the month. |
| CRRSAMTTOT | $ | CRR Shortfall Amount Total—The total of shortfall charges to all CRR Owners for all Operating Hours in the month. |
| CRRZREV | None | Calculate CRR Zonal Revenue per 2003 ERCOT Congestion Management Zone (CMZ) per CRR Auction for PTP Obligations and PTP Options for which source and sink are located within the same 2003 ERCOT CMZ, cleared in each CRR Auction |
| DAAGRRATIO | None | Day Ahead Aggregate Generation Resource Ratio per QSE per Settlement Point per Aggregate Generation Resource– A value which represents the ratio of the maximum number of generators online during an hour, as indicated by telemetry, compared to the total number of generators registered to the AGR and used in the approved verifiable cost for the AGR. The value is only applicable if the Resource is an AGR. |
| DAAIEC | $/MWh | Day-Ahead Average Incremental Energy Cost per QSE per Settlement Point per Resource per hour – The average incremental energy cost, calculated according to the energy offer curve capped by the generic energy price, for the output levels between the DAESR and the DALSL of the Resource at the Resource Node Settlement Point represented by the QSE, for the hour. Where for a Combined Cycle Train, the Resource is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| DAASREV | $ | Day-Ahead Ancillary Service Revenue per QSE per Resource by hour. The revenue received in the DAM for the Resource represented by the QSE, based on the Market Clearing Price of Capacity for each Ancillary Service in the DAM, for the hour h. Where for a Combined Cycle Train, the Resource is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| DACRRCHTOT | $ | Day-Ahead CRR Charge Total—The total charge to all CRR Owners of all the CRRs settled in the DAM, for the hour. See 7.9.3.2. |
| DACRRCRTOT | $ | Day-Ahead CRR Credit Total—The total payment to all CRR Owners of all the CRRs settled in the DAM, for the hour. See 7.9.3.2. |
| DACRRSAMT | $ | Day-Ahead CRR Shortfall Amount per owner—The shortfall charge to CRR Owner o for its CRRs settled in the DAM for the hour. |
| DACRRSAMTTOT | $ | Day-Ahead CRR Shortfall Amount Total—The shortfall charge to all CRR Owners for their CRRs settled in the DAM and the RTM for the hour. |
| DAE | MW | Day-Ahead Energy per QSE – The QSE’s total amount of energy, represented by its cleared DAM Energy Bids and PTP Obligation Bids, for the hour. |
| DAEP | MW | Day-Ahead Energy Purchase per QSE per Settlement Point—The total amount of energy represented by the QSE’s cleared DAM Energy Bids at the Settlement Point for the hour. |
| DAEREV | $ | Day-Ahead Energy Revenue per QSE per Settlement Point per Resource by hour. The revenue received in the DAM for the Resource at the Resource Node Settlement Point represented by the QSE, based on the DAM Settlement Point Price, for the hour. Where for a Combined Cycle Train, the Resource is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| DAERS | none | Day-Ahead Energy Purchase Ratio Share per QSE - The ratio of the QSE’s total amount of energy represented by its cleared DAM Energy Bids and PTP Obligation Bids, to the total amount of energy represented by all QSEs’ cleared DAM Energy Bids and PTP Obligation Bids, for the hour. |
| DAES | MW | Day-Ahead Energy Sale per QSE per Settlement Point. The total amount of energy represented by the QSE’s cleared Three-Part Supply Offers in the DAM and cleared DAM Energy-Only Offer Curves at the Settlement Point for the hour. |
| DAESAMT | $ | Day-Ahead Energy Sale Amount per QSE per Settlement Point-The payment to the QSE for the cleared energy offers at the Settlement Point for the hour. |
| DAESAMTQSETOT | $ | Day-Ahead Energy Sale Amount QSE Total per QSE. The total of the payments to the QSE for its cleared energy offers at all Settlement Points for the hour. |
| DAESAMTTOT | $ | Day-Ahead Energy Sale Amount Total - The total of the payment to all QSEs for cleared DAM energy offers, whether through Three-Part Supply Offers or through DAM Energy-Only Offer Curves, for the hour. |
| DAESR | MW | Day-Ahead Energy Sale from Resource per QSE by Settlement Point per Resource by hour. The amount of energy cleared through Three-Part Supply Offers in the DAM for the Resource at the Resource Node Settlement Point represented by the QSE for the hour. Where for a Combined Cycle Train, the Resource is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| DAETOT | MW | Day-Ahead Energy Total—The total amount of energy represented by all cleared DAM Energy Bids and all cleared PTP Obligation Bids for the hour. |
| DAFCRS | MMBtu/Start | Day-Ahead Actual Fuel Consumption Rate per Start—The actual fuel consumption rate for a Resource to startup and reach breaker close, for the start type, that has been submitted to and approved by ERCOT through the Verifiable Costs submittal and approval process. |
| DALSL | MW | Low Sustained Limit per QSE per Settlement Point per Resource per hour. The Low Sustained Limit of the Resource at the Resource Node Settlement Point represented by the QSE, for the hour. Where for a Combined Cycle Train, the Resource is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| DAMCOMMITFLAG | Misc | DAM-Committed Resource Flag per QSE and Resource by hour. Flag that indicates if an hourly interval was DAM-Committed for a QSE and Resource for the hour. The value of one (1) indicates that the interval is DAM-committed interval; a value of zero (0) indicates that the interval is not DAM-committed. |
| DAMECAP | $/MW/Hr | Day-Ahead Verifiable Minimum Energy Cap- Verifiable or Generic cost used to cap DAMEO in the DAMEPR calculation |
| DAMEO | $/MWh | Minimum-Energy Offer per QSE per Settlement Point per Resource per hour—The Minimum-Energy Offer included in the Three-Part Supply Offer associated with the Resource at the Resource Node Settlement Point represented by the QSE, for the hour. Where for a Combined Cycle Train, the Resource is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| DAMEPR | $/MW/Hr | Day-Ahead Minimum Energy Price— The price for a Resource to sustain LSL for the hour. |
| DAMGCOST | $ | Day-Ahead Market Guaranteed Amount per QSE per Settlement Point per Resource. The sum of the startup cost and the operating energy costs of the DAM-committed Resource at the Resource Node Settlement Point represented by the QSE, for the DAM-commitment period. Where for a Combined Cycle Train, the Resource is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| DAMSUFLAG | Misc | Day-Ahead Startup Eligibility Flag per QSE and Resource – The hourly flag that indicates whether or not a Resource is eligible for startup compensation in a DAM commitment. For each hour, the value is set to zero (0) if the Resource is not eligible for startup cost compensation, or one (1) if eligible for startup cost compensation in the Day-Ahead Make-Whole Payment. |
| DAMTFLAG | Misc | Day-Ahead Make-Whole Transition Flag per QSE and Resource or Train by Settlement Point. The hourly flag that indicates whether or not a Combined Cycle resource Day Ahead Commitment transitioned from one configuration type to another. For each hour, the value is set to zero (0) unless the DAM commitment for the combined cycle plant transitions from one configuration type to another. If there is a transition, the value of the flag is set to one (1) in the first hour of the second commitment period |
| DAMWAMT | $ | Day-Ahead Make-Whole Payment per QSE per Settlement Point per Resource per hour. The payment to the QSE to make-whole the Startup Cost and Energy Cost of the Resource committed in the DAM at the Resource Node Settlement Point for the hour. When a Combined Cycle Generation Resource is committed in the DAM, payment is made to the Combined Cycle Train for the DAM-committed Combined Cycle Generation Resource. |
| DAMWAMTQSETOT | $ | Day-Ahead Make-Whole Payment QSE Total per QSE - The total of the Day-Ahead Make-Whole Payments to the QSE for the DAM-committed Generation Resources represented by this QSE for the hour. |
| DAMWAMTTOT | $ | Day-Ahead Make-Whole Payment Total - The total of the Day-Ahead Make-Whole Payments to all QSEs for all DAM-committed non-RMR Resources for the hour. |
| DAMWENEFLAG | Misc | Day-Ahead Make-Whole Energy Eligibility Flag per QSE and Resource. The flag that indicates Day-Ahead Make-Whole Payment energy eligibility for the Resource represented by the QSE, for the hour. The value is set to zero (0) if the resource is not eligible or one (1) if the resource is eligible for energy costs in the Day-Ahead Make-Whole payment, for the hour. |
| DAOBL | MW | Day-Ahead Obligation per CRR Owner per source and sink pair—The number of CRR Owner’s PTP Obligations with the pair of source and sink settled in the DAM for the hour. |
| DAOBLAMT | $ | Day-Ahead Obligation Amount per CRR Owner per source and sink pair—The payment or charge to CRR Owner for the PTP Obligations with the pair of source and the sink settled in the DAM, for the hour. |
| DAOBLAMTOTOT | $ | Day-Ahead Obligation Amount Owner Total per CRR Owner—The net total payment or charge to CRR Owner for all its PTP Obligations settled in the DAM, for the hour. |
| DAOBLCHOTOT | $ | Day-Ahead Obligation Charge Owner Total per CRR Owner—The total charge to CRR Owner for its PTP Obligations settled in the DAM, for the hour. |
| DAOBLCHTOT | $ | Day-Ahead Obligation Charge Total — The total charge of all PTP Obligations settled in DAM, for the hour. |
| DAOBLCROTOT | $ | Day-Ahead Obligation Credit Owner Total per CRR Owner—The total payment to CRR Owner for its PTP Obligations settled in the DAM, for the hour. |
| DAOBLCRTOT | $ | Day-Ahead Obligation Credit Total — The total payment of all PTP Obligations settled in DAM, for the hour. |
| DAOBLDA | $ | Day-Ahead Obligation Derated Amount per CRR Owner per source and sink pair—The derated amount of CRR Owner’s PTP Obligations with the pair of source and sink settled in the DAM, for the hour. |
| DAOBLHV | $ | Day-Ahead Obligation Hedge Value per CRR Owner per source and sink pair—The hedge value of CRR Owner’s PTP Obligations with the pair of source and the sink settled in the DAM, for the hour. |
| DAOBLHVPR | $/MWh | Day-Ahead Obligation Hedge Value Price per source and sink pair—The Day-Ahead hedge price of a PTP Obligation with the pair of source and sink, for the hour. |
| DAOBLPR | $/MW/Hr | Day-Ahead Obligation Price per source and sink pair—The DAM price of a PTP Obligation, and Real-Time Obligation with Links to an Option for the pair of source and sink, for the hour. |
| DAOBLR | MW | Day-Ahead Obligation with Refund per CRR Owner per pair of source and sink. The number of CRR Owner’s PTP Obligations with Refund with the source and sink pair settled in DAM for the hour. |
| DAOBLRAMT | $ | Day-Ahead Obligation with Refund Amount per CRR Owner per pair of source and sink. The payment to CRR Owner for the PTP Obligation with Refund with the source and sink pair, settled in the DAM, for the hour. |
| DAOBLRAMTOTOT | $ | Day-Ahead Obligation with Refund Amount Owner Total per CRR Owner—The net total payment or charge to CRR Owner for all its PTP Obligations with Refund settled in the DAM, for the hour. |
| DAOBLRCHOTOT | $ | Day-Ahead Obligation with Refund Charge Owner Total per CRR Owner—The total charge to CRR Owner for its PTP Obligations with Refund settled in the DAM, for the hour. |
| DAOBLRCHTOT | $ | Day-Ahead Obligation with Refund Charge Total—The total charge of all PTP Obligations with Refund settled in the DAM, for the hour. |
| DAOBLRCROTOT | $ | Day-Ahead Obligation with Refund Credit Owner Total per CRR Owner—The total payment to CRR Owner for its PTP Obligations with Refund settled in the DAM, for the hour. |
| DAOBLRCRTOT | $ | Day-Ahead Obligation with Refund Credit Total—The total payment of all PTP Obligations with Refund settled in the DAM, for the hour. |
| DAOBLRDA | $ | Day-Ahead Obligation with Refund Derated Amount per CRR Owner per source and sink pair—The derated amount of CRR Owner’s PTP Obligations with Refund, with the source and the sink pair, settled in the DAM, for the hour. |
| DAOBLRHV | $ | Day-Ahead Obligation with Refund Hedge Value per CRR Owner per source and sink pair—The hedge value of CRR Owner’s PTP Obligations with Refund, with the source and sink pair, settled in the DAM, for the hour. |
| DAOBLRTP | $ | Day-Ahead Obligation with Refund Target Payment per CRR Owner per source and sink pair—The target payment for CRR Owner’s PTP Obligations with Refund, with the source and the sink pair, settled in the DAM, for the hour. |
| DAOBLTP | $ | Day-Ahead Obligation Target Payment per CRR Owner per source and sink pair—The target payment for CRR Owner’s PTP Obligations with the pair of source and the sink settled in the DAM, for the hour. |
| DAOPTAMT | $ | Day-Ahead Option Amount per CRR Owner per source and sink pair—The payment or charge to CRR Owner for the PTP Options with the source and the sink settled in the DAM, for the hour. |
| DAOPTAMTOTOT | $ | Day-Ahead Option Amount Owner Total per CRR Owner—The net total payment or charge to CRR Owner for all its PTP Options settled in the DAM, for the hour. |
| DAOPTAMTTOT | $ | Day-Ahead Option Amount Total—The total payment of all PTP Options settled in the DAM, for the hour. |
| DAOPTDA | $ | Day-Ahead Option Derated Amount per CRR Owner per source and sink pair—The derated amount of CRR Owners PTP Options with the source and the sink settled in the DAM, for the hour. |
| DAOPTHV | $ | Day-Ahead Option Hedge Value per CRR Owner per source and sink pair—The hedge value of CRR Owner’s PTP Options with the source and the sink settled in the DAM, for the hour. |
| DAOPTHVPR | $/MWh | Day-Ahead Option Hedge Value Price per pair of source and sink—The Day-Ahead hedge price of a PTP Option with the pair of source and sink, for the hour. |
| DAOPTPR | $/MW/Hr | Day-Ahead Option Price per pair of source and sink. The DAM price of the PTP Option with the pair of source and sink, for the hour. |
| DAOPTRAMT | $ | Day-Ahead Option with Refund Amount per CRR Owner per pair of source and sink-The payment to CRR Owner for its PTP Options with Refund with the pair of source and the sink, settled in the DAM, for the hour. |
| DAOPTRAMTOTOT | $ | Day-Ahead Option with Refund Amount Owner Total per CRR Owner—The total payment to NOIE CRR Owner for all its PTP Options with Refund settled in the DAM, for the hour. |
| DAOPTRAMTTOT | $ | Day-Ahead Option with Refund Amount Total—The total payment of all PTP Options with Refund settled in the DAM, for the hour. |
| DAOPTTP | $ | Day-Ahead Option Target Payment per CRR Owner per source and sink pair—The target payment for CRR Owner’s PTP Options with the source and the sink settled in the DAM, for the hour. |
| DAPCXXAMTTOT | $ | Day-Ahead Procured Capacity for the AS Type Amount Total —The total of the DAM AS Type payments for all QSEs for the hour. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| DAPCXXOAMT | $ | Day-Ahead Procured Capacity for the AS Type per QSE in DAM—The total AS Service capacity quantity awarded to QSE Q in the DAM for all the Resources represented by this QSE for the hour. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| DAPCXXQTOT | MW | Day-Ahead Procured Capacity for the AS Type Total—The total AS Type capacity for all QSEs for all AS Type awarded and self-arranged in the DAM for the Operating Hour. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| DARTOBLAMT | $ | Day-Ahead Real-Time Obligation Amount per QSE per pair of source and sink-The charge or payment to QSE for a PTP Obligation Bid cleared in the DAM with the source and the sink, for the hour. |
| DARTOBLAMTQSETOT | $ | Day-Ahead Real-Time Obligation Amount QSE Total per QSE - The net total charge or payment to QSE for all its PTP Obligation Bids cleared in the DAM for the hour. |
| DARTOBLAMTTOT | $ | Day-Ahead Real-Time Obligation Amount Total - The net total charge or payment to all QSEs for cleared PTP Obligation Bids in the DAM for the hour. |
| DARTOBLLOAMT | $ | Day-Ahead Real-Time Obligation with Links to an Option Amount per QSE per pair of source and sink—The charge to QSE q for a PTP Obligation bid with Links to an Option purchased in the DAM with the source j and the sink k for the hour. |
| DARTOBLLOAMTQSETOT | $ | Day-Ahead Real-Time Obligation with Links to an Option Amount QSE Total per QSE—The net total charge to QSE q for all its PTP Obligation bids with Links to an Option purchased in the DAM for the hour. |
| DARTOBLLOAMTTOT | $ | Day-Ahead Real-Time Obligation with Links to an Option Amount Total—The net total charge to all QSEs for PTP Obligation bids purchased in the DAM for the hour. |
| DARTPCXXAMT | $ | Day-Ahead Updated Real-Time Procured Capacity for the AS Type Amount by QSE - The payment or charge to QSE q for the AS Type, for the re-calculated Real-Time obligation, for the Operating Hour. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| DASAXXQ | MW | Day-Ahead Self-Arranged AS Type Quantity per QSE—The self-arranged AS Type quantity submitted by QSE Q before 1000 in the Day-Ahead. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| DASP | $/MW/Hr | Day-Ahead Shadow Price per element per constraint-The DAM Shadow Price on the directional network element, for the constraint, for the Operating Hour. |
| DASPP | $/MWh | Day-Ahead Settlement Point Price by Settlement Point by hour-The DAM Settlement Point Price at the Resource Node Settlement Point for the hour. |
| DASTARTTYPE | Misc | Day-Ahead Start Type Flag - The flag that indicates, for a Resource, the type of start incurred (hot, intermediate, cold). Its value is one (1) for hot, two (2) for intermediate and three (3) for cold; otherwise, zero (0). |
| DASUCAP | $/Start | Day-Ahead Startup Cap per QSE per Settlement Point per Resource—The amount used for AGR r or Resource r as Startup Costs. The cap is the Resource Category Startup Offer Generic Cap (RCGSC) unless ERCOT has approved verifiable unit-specific Startup Costs for that Resource, in which case the startup cap is the scaled verifiable unit-specific Startup Cost for the AGR or the verifiable unit-specific Startup Cost for non-AGR Resources. See Section 5.6.1, Verifiable Costs, for more information on verifiable costs. |
| DASUO | $/Start | Startup Offer per QSE per Settlement Point per Resource-The Startup Offer included in the Three-Part Supply Offer associated with the Resource at the Resource Node Settlement Point represented by the QSE, representing an offer for all costs incurred by the Resource in starting up and reaching breaker close, for the first hour of the DAM-commitment period. Where for a Combined Cycle Train, the Resource is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| DASUPR | $/Start | Day-Ahead Startup Price—The derived Startup Price for a Resource at the Resource Node Settlement Point represented by the QSE |
| DAVERIME | $/MW/Hr | Day-Ahead Verifiable Minimum Energy Cost- The verifiable minimum-energy price to sustain a Resource at LSL |
| DAVERISU | $/Start | Day-Ahead Verifiable Startup Cost—The verifiable price for a DAM-Committed AGR to startup and reach breaker close, for the type of start (hot, intermediate, cold), according to Section 5.6.1.1, Verifiable Startup Costs. The value is only applicable if the Resource is an AGR. |
| DAWASF | None | Day-Ahead Weighted Average Shift Factor at source (sink) per constraint—The Day-Ahead Shift Factor for the source (sink) Settlement Point and the directional network element for constraint, in the hour. |
| DAXXAMT | $ | Day-Ahead AS Amount per QSE—QSE’s Q share of the DAM cost for the AS, for the hour. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| DAXXNOBL | MW | Day-Ahead AS New Obligation per QSE—The updated AS Ancillary Service Obligation in Real-Time for QSE q for the Operating Hour. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| DAXXO | MW | Day-Ahead AS Type Obligation per QSE—The AS Type capacity obligation for QSE Q for the DAM for the hour. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| DAXXOAWD | MW | Day-Ahead AS Type Only Award for the QSE - The AS Type only capacity awarded in the DAM to the QSE q for the Operating Hour. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| DAXXPR | $/MW/Hr | Day-Ahead AS Type Price—The Day-Ahead AS Type price for the hour. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| DAXXQ | MW | Day-Ahead AS Type Quantity per QSE—The portion of QSE’s Q net Day-Ahead Ancillary Service obligation that is not self-supplied with its Resources capacity, for the hour. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| DAXXQTOT | MW | Day-Ahead AS Quantity Total—The sum of every QSE’s portion of its net Day-Ahead Ancillary Service obligation that is not self-supplied with its Resource, for the hour. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| DCFO | Misc | DC Tie Forced Outage Flag - The time in which an entire DC Tie experiences a Forced Outage. |
| DCIMPADJ | MW | DC Import per QSE per Settlement Point—The approved aggregated DC Tie Schedule submitted by QSE q as an importer into the ERCOT System through DC Tie p according to the Adjustment Period snapshot, for the 15-minute Settlement Interval i. |
| DCIMPSNAP | MW | DC Import per QSE per Settlement Point—The approved aggregated DC Tie Schedule submitted by QSE q as an importer into the ERCOT System through DC Tie p, according to the snapshot for the RUC process for the hour that includes the 15-minute Settlement Interval i. |
| DQSELSELRS | None | Daily QSE Opt-In LSE Load Ratio Share — The ratio of a QSE’s Opt-in LSE Adjusted Meter Load to total Opt-in LSE Adjusted Meter Load, for a QSE, for the Operating Day. |
| DRF | None | Deration Factor per constraint—The deration factor of the constraint for the hour, equal to the MW amount by which the constraint is oversold divided by the total MW amount of the positive impacts on the constraint of all CRRs existing prior to DAM execution. |
| DSRFLAG | Misc | Dynamically Scheduled Resource Flag for Dispatch to Base-Point other than Output Schedule – Flag that indicates when a base-point that is outside the limits of a Dynamically Scheduled Resource’s output schedule is issued to that Dynamically Scheduled Resource for an entire 15-minute Settlement Interval. Its value will be one (1) for each entire 15-minute Settlement Interval when the base-point is outside the limit; otherwise zero (0). |
| EBP | MW | Emergency Base Point per QSE per Settlement Point per Resource by interval—The Emergency Base Point of Resource r at Resource Node p represented by QSE q for the Emergency Base Point interval or SCED interval y.  If a Base Point instead of an Emergency Base Point is effective during the interval y, its value equals the Base Point.  Where for a Combined Cycle Train, the Resource r is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| EBPWAPR | $/MWh | Emergency Base Point Weighted Average Price per QSE per Settlement Point per Resource—The weighted average of the energy prices corresponding with the Emergency Base Points on the Energy Offer Curve for the Resource at the Resource Node Settlement Point represented by the QSE, for the 15-minute Settlement Interval. |
| EBPWAPRGEN | $/MWh | Emergency Base Point Weighted Average Price for Generation per QSE per Settlement Point per Resource—The weighted average of the Emergency Base Point Prices corresponding with the positive Emergency Base Points, for Resource r at Resource Node p represented by QSE q, for the 15-minute Settlement Interval. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| EBPWAPRLOAD | $/MWh | Emergency Base Point Weighted Average Price for Charging Load per QSE per Settlement Point per Resource—The weighted average of the Emergency Base Point Prices corresponding with the negative Emergency Base Points, for Resource r at Resource Node p represented by QSE q, for the 15-minute Settlement Interval. |
| ECRPOSADJ | MW | ERCOT Contingency Reserve Service Position at End of Adjustment Period ¾The QSE q’s net positive ECRS Ancillary Service Position at the end of the Adjustment Period for the hour h that includes the 15-minute Settlement Interval. |
| ECRPOSSNAP | MW | ERCOT Contingency Reserve Service Position at Snapshot ¾The QSE q’s net positive Real-Time ECRS Ancillary Service Position according to the RUC Snapshot for the RUC process ruc for the hour h that includes the 15-minute Settlement Interval. |
| ECRSFLAG | Misc | ERCOT Contingency Reserve Service Flag – Flag that indicates when ERCOT Contingency Reserve Service has been deployed. Its value will be one (1) for every 15-minute Settlement Interval in which ERCOT deploys ERCOT Contingency Reserve Service; otherwise zero (0). |
| EEA | Misc | Energy Emergency Alert Flag—The flag that indicates when if an Energy Emergency Alert was in effect for any period of an Operating Day. The value will be one (1) if EEA was in effect for any period of the Operating Day and zero (0) if EEA was not in effect for any period of the Operating Day. |
| EMGSETLFLAG | None | Emergency Settlement Type Flag – A numerical flag that indicates which paragraph a Resource should be settled under for emergency Settlements. A value of 1 indicates it should be settled under paragraph (1) of Section 6.6.9.1; a value of 2 indicates it should be settled under paragraph (2) of Section 6.6.9.1. |
| EMRE | MWh | Emergency Energy per QSE per Settlement Point per Resource—The additional energy produced by the Generation Resource at the Resource Node Settlement Point represented by the QSE in Real-Time during the Emergency Condition, for the 15-minute Settlement Interval. |
| EMREAMT | $ | Emergency Energy Amount per QSE per Settlement Point per Resource—The payment to QSE q as additional compensation for the additional energy or Ancillary Services produced or consumed by Resource r at Resource Node p in Real-Time during the Emergency Condition or Watch, for the 15-minute Settlement Interval. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| EMREAMTQSETOT | $ | Emergency Energy Amount QSE Total per QSE — The total of the payments to QSE q as additional compensation for additional energy or Ancillary Services of the Resources represented by this QSE for the 15-minute Settlement Interval. |
| EMREAMTTOT | $ | Emergency Energy Amount Total—The total of the payments to all QSEs as additional compensation for additional energy or Ancillary Services of the Resources for the 15-minute Settlement Interval. |
| EMREGEN | MWh | Emergency Energy for Generation per QSE per Settlement Point per Resource—The generation produced by Resource r at Resource Node p represented by QSE q in Real-Time during the Emergency Condition or Watch, for the 15-minute Settlement Interval. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| EMRELOAD | MWh | Emergency Energy for Charging Load per QSE per Settlement Point per Resource—The charging load for Resource r at Resource Node p represented by QSE q in Real-Time during the Emergency Condition or Watch, for the 15-minute Settlement Interval. |
| EMREPR | $/MWh | Emergency Energy Price per QSE per Settlement Point per Resource —The compensation rate for the additional energy produced by the Generation Resource at the Resource Node Settlement Point represented by the QSE in Real-Time during the Emergency Condition, for the 15-minute Settlement Interval. |
| EMREPRGEN | $/MWh | Emergency Energy Price for Generation per QSE per Settlement Point per Resource—The compensation rate for the generation produced by Resource r at Resource Node p represented by QSE q in Real-Time during the Emergency Condition or Watch, for the 15-minute Settlement Interval. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| EMREPRLOAD | $/MWh | Emergency Energy Price for Charging Load per QSE per Settlement Point per Resource—The compensation rate for the charging load for Resource r at Resource Node p represented by QSE q in Real-Time during the Emergency Condition or Watch, for the 15-minute Settlement Interval. |
| EOCQFFLAG | Misc | Energy Offer Curve Flag for Qualifying Facilities – Flag that indicates the submittal status of an Energy Offer Curve for a Qualifying Facility. Its value will be one (1) for each 15-minute Settlement Interval when the Qualifying Facility submits an Energy Offer Curve; otherwise zero (0). |
| ERSPAMT | $ | ERS Payment Amount per QSE per ERSS Contract Period per ERS Time Period—ERS total payment to QSE q for ERSS Contract Period c and ERSS Time Period tp. |
| ERSPAMTQSETOT | $ | ERS Payment QSE Total per QSE per ERS Contract Period—The total ERS total payments to QSE q for ERS Contract Period c. |
| ERSPAMTTOT | $ | ERS Payment Amount Total per ERS Contract Period per ERS Time Period—Total of all ERS payments for ERS Contract Period c and ERS Time Period tp. |
| ESACAMT | $ | ERCOT System Administration Charge - The ERCOT System administration charge for each QSE per 15-minute Settlement Interval. |
| ESRASADJ | MW | Calculated Ancillary Service MW Capacity Provided By QSE’s ESR Portfolio at the End of Adjustment Period—The total ESR MW capacity used to cover the QSE q’s Upward Ancillary Service position for Reg-Up, RRS, ECRS, and Non-Spin at the end of Adjustment Period for the hour h that includes the 15-minute Settlement Interval. |
| ESRASSNAP | MW | Calculated Ancillary Service MW Capacity Provided By QSE’s ESR Portfolio at Snapshot—The total ESR MW capacity used to cover the QSE q’s Upward Ancillary Service position for Reg-Up, RRS, ECRS, and Non-Spin in the RUC Snapshot for the RUC process ruc, for the hour h that includes the 15-minute Settlement Interval. |
| ESRMWADJ | MW | Calculated QSE Total ESR MW Discharging or Charging Required To Support Ancillary Service at End of Adjustment Period—The total net ESR MW discharging or charging required to cover the QSE q’s Ancillary Service position provided by the QSE ESR portfolio at the end of Adjustment Period for the hour h that includes the 15-minute Settlement Interval, taking into account the COP SOC values from COP. |
| ESRMWSNAP | MW | Calculated QSE Total ESR MW Discharging or Charging Required To Support Ancillary Service at Snapshot—The total net ESR MW discharging or charging required to cover the QSE q’s Ancillary Service position provided by the QSE ESR portfolio in the RUC Snapshot for the RUC process ruc, for the hour h that includes the 15-minute Settlement Interval, taking into account the COP SOC values from COP. |
| ESRNWSLAMTTOT | $ | Energy Storage Resource Non-WSL Settlement – The total payment or charge to QSE q, Resource r, at Settlement Point p, for Non-WSL ESR Charging Load for each 15-minute Settlement Interval. |
| ESRNWSLTOT | MWh | ESR Non-WSL Total – The total energy metered by the Settlement Meteres which measures Non-WSL ESR Charging Load for the QSE q at Settlement Point p. |
| FA | $/MMBtu | Fuel Adder — The fuel adder is the average cost above the index price Resource r has paid to obtain fuel. Where for a Combined Cycle Train, the Resource r is a Combined Cycle Generation Resource within the Combined Cycle Train. See the Verifiable Cost manual for additional information. |
| FFSEDFLAG | Misc | Firm Fuel Supply Event Deployment Flag per QSE per Resource by hour—The flag of successful FFSS deployment of the FFSSR r including hours in the period defined in the RFP following the instruction from ERCOT to restore FFSS capability represented by QSE q, 1 for available and 0 for unavailable, for the hour. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| FFSSACAP | MW | Firm Fuel Supply Service Awarded Capacity per QSE per Resource—The awarded FFSS capacity of FFSSR r, represented by QSE q as specified in the FFSS award, applicable to each hour of the Operating Day. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| FFSSAFLAG | Misc | Firm Fuel Supply Service Availability Flag per QSE per Resource by hour—The flag of the availability of FFSSR r represented by QSE q, 1 for available and 0 for unavailable, for the hour. The availability flag shall be determined based on FFSSR availability for the current operating hour and the previous 1,451 hours withing the obligation start date and obligation stop date during the awarded FFSS obligation period. Where for a Combined Cycle Train, the Resource r is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| FFSSAMT | $ | Firm Fuel Supply Service Amount per QSE per Resource by hour—The payment to QSE q for the Firm Fuel Supply Service (FFSS) provided by FFSSR r, for the hour, calculated each hour within the obligation start date and obligation stop date during the awarded FFSS obligation period. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| FFSSAMTQSETOT | $ | Firm Fuel Supply Service Amount QSE Total per QSE – The total of the payments to QSE q for FFSS provided by all the FFSS Resources represented by this QSE for the hour. |
| FFSSAMTTOT | $ | Firm Fuel Supply Service Amount QSE Total ERCOT-Wide — The total of the payments to all QSEs for FFSS for the hour. |
| FFSSARF | Misc | Firm Fuel Supply Service Availability Reduction Factor per QSE per Resource by hour—The availability reduction factor of FFSSR r represented by QSE q for the hour. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| FFSSAWARD | $ | Firm Fuel Supply Service Award Amount per QSE by hour – The payment to the QSE q for the FFSS awarded to the FFSSR r for each hour h, during the awarded FFSS obligation period. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| FFSSCACAP | MW | Firm Fuel Supply Service Cumulated Awarded Capacity per QSE per Resource for the current operating hour based on the data of the previous 1,451 hours within the obligation start date and obligation stop date. |
| FFSSCRF | Misc | Firm Fuel Supply Service Capacity Reduction Factor per QSE per Resource by hour—The capacity reduction factor for the FFSSR r, represented by QSE q, for the hour. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| FFSSDRP | Misc | Firm Fuel Supply Service Deployment Reduction Percentage – The percentage of the Firm Fuel Supply Service Standby Fee subject to clawback per paragraphs (5) through (12) of Section 8.1.1.2.1.7, Firm Fuel Supply Service Resource Qualification, Testing, and Decertification, for the QSE q, for the Resource r, for the hour h. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| FFSSEH | Misc | Firm Fuel Supply Service Elapsed number of Hours per QSE per Resource by hour – The number of the elapsed hours of the term of the Firm Fuel Supply Service Agreement for FFSS Unit r represented by QSE q, for the hour. Where for a combined cycle Resource r is the Combined Cycle Train. |
| FFSSFRC | $/Hr | Firm Fuel Supply Service Fuel Replacement Cost – The fuel costs and fees to replace the burned fuel, not recovered during the FFSS deployment period, for FFSSR r represented by QSE q for each FFSS instructed hour. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| FFSSHREAF | Misc | Firm Fuel Supply Service Hourly Rolling Equivalent Availability Factor per QSE per Resource by hour—The equivalent availability factor of the FFSSR r represented by QSE q over 1,452 hours, for the hour. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| FFSSPR | $/MW/Hr | Firm Fuel Supply Service Price per QSE per Resource by hour —The standby price as specified in the FFSS award for the FFSSR r, represented by QSE q, applicable to each hour of the Operating Day. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| FFSSSBF | $ | Firm Fuel Supply Service Standby Fee per QSE per Resource by hour—The standby fee to QSE q for the Firm Fuel Supply Service (FFSS) provided by FFSSR r, for the hour. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| FFSSTCAP | MW | Firm Fuel Supply Service Testing Capacity per QSE per Resource—The tested capacity of FFSSR r, represented by QSE q, applicable to each hour of the Operating Day. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| FIP | $/MMBtu | Fuel Index Price—The Fuel Index Price for the Operating Day. |
| FOP | $/MMBtu | Fuel Oil Price – The sum of five cents per gallon plus the average of the range shown in the ERCOT-selected index for U.S. Gulf Coast, Houston pipeline No. 2 oil, converted to dollars per million British thermal units ($/MMBtu) for the Operating Day. |
| FQDEVFLAG | Misc | ERCOT Frequency Deviation Flag – Flag that indicates when the ERCOT System Frequency is not between -0.05 Hz and 0.05 Hz. Its value will be one (1) for each 15-minute Settlement Interval when the Frequency is > 0.05 Hz; two (2) when the Frequency is < -0.05 Hz; and three (3) for each 15-minute Settlement Interval when the Frequency is both < -0.05 Hz and > 0.05 Hz in the same 15-minute Settlement Interval; otherwise zero (0). |
| GASPERME | Misc | Percent Gas – The percentage of fuel used by the resource to operate at minimum-energy that will be gas. |
| GASPERSU | Misc | Percent Gas – The percentage of fuel used by the resource to startup that will be gas, for each start type. |
| GSPLITPER | None | Generation Resource SCADA Splitting Percentage—The generation allocation percentage for Resource r that is part of a net metering arrangement. GSPLITPER is calculated by taking the SCADA values (GSSPLITSCA) for a particular Generation Resource r that is part of a net metering configuration and dividing by the sum of all SCADA values for all Resources that are included in the net metering configuration for each interval. |
| HASLADJ | MW | High Ancillary Services Limit at Adjustment Period—The High Ancillary Services Limit of the Resource r represented by the QSE q, according to the adjustment period snapshot, for the hour that includes the 15-minute Settlement Interval. If the HASL for a Resource was credited to the QSE during the RUC Snapshot but the Resource experiences a Forced Outage within two hours before the start of the Settlement Interval, then the HASL for that Resource is also credited to the QSE in the HASLADJ |
| HASLSNAP | MW | High Ancillary Services Limit at Snapshot—The High Ancillary Services Limit of the Resource r represented by the QSE q, according to the COP and Trades Snapshot for the RUC process for the hour that includes the 15-minute Settlement Interval. If the Resource is WIND or PVGR, then the HASLSNAP is equal to the lessor of the HSL or Production Potential (P80 MW value) for that Resource at the time of RUC execution. |
| HBIMBAL | MWh | Hub Energy Imbalance per QSE per Settlement Point — The Hub volumetric imbalance for QSE q for Real-Time Energy Imbalance Service at Settlement Point p for the 15-minute Settlement Interval. |
| HDLOAL | $ | High Dispatch Limit override attested losses - The financial loss to the QSE due to the HDL override as attested by the QSE in accordance with paragraph (1)(d) above. |
| HDLOBRKP | MW | High Dispatch Limit override break point per QSE per Resource—The point on the Energy Offer Curve corresponding to the lesser of the AVGHASL or the interception between the RTSPP of the Generation Resource r represented by QSE q minus the Real-Time Reserve Price for On-Line Reserves and the Real-Time On-Line Reliability Deployment Price and the Energy Offer Curve of Generation Resource r represented by QSE q, for the 15-minute Settlement Interval i. For a combined cycle Resource, r is a Combined Cycle Train. |
| HDLOBRKPCP | MW | High Dispatch Limit override break point at clearing price per QSE per Resource—The MW value on the Energy Offer Curve corresponding to the Real-Time Settlement Point Price of Generation Resource r represented by QSE q at Settlement Point p minus the Real-Time Reserve Price for On-Line Reserves and the Real-Time On-Line Reliability Deployment Price. For a combined cycle Resource, r is a Combined Cycle Train. |
| HDLOEAMT | $ | High Dispatch Limit override energy amount per QSE per Generation Resource—The payment to QSE q for an ERCOT-issued HDL override for Generation Resource r at Settlement Point p for the 15-minute Settlement Interval i. For a combined cycle Resource, r is a Combined Cycle Train. |
| HDLOEAMTQSETOT | $ | High Dispatch Limit override energy amount QSE total per QSE—The total of the energy payments to QSE q as compensation for HDL overrides for this QSE for the 15-minute Settlement Interval i. |
| HDLOEAMTTOT | $ | High Dispatch Limit energy amount total—The total of payments to all QSEs for HDL overrides, for the 15-minute Settlement Interval i. |
| HDLOQTY | MWh | High Dispatch Limit override quantity per QSE per Generation Resource— The difference between the HDLOBRKP and the AVGHDL due to an ERCOT-issued HDL override for Generation Resource r represented by QSE q at Settlement Point p for the 15-minute Settlement Interval i. For a combined cycle Resource, r is a Combined Cycle Train. |
| HECRADJ | MW | Ancillary Service Resource Responsibility Capacity for ERCOT Contingency Reserve Service at Adjustment Period—The ECRS Ancillary Service Resource Responsibility for the Resource as seen in the last Current Operating Plan (COP) and Trades Snapshot at the end of the Adjustment Period, for the hour that includes the 15-minute Settlement Interval. |
| HLRS | None | The hourly Load Ratio Share calculated for QSE q for the hour. See Section 6.6.2.3, QSE Load Ratio Share for an Operating Hour. |
| HNSADJ | MW | Ancillary Service Resource Responsibility Capacity for Non-Spin at Adjustment Period—The Non Spin Ancillary Service Responsibility for the Resource as seen in the last COP and Trades Snapshot at the end of the Adjustment Period, for the hour that includes the 15-minute Settlement Interval. |
| HRRADJ | MW | Ancillary Service Resource Responsibility Capacity for Responsive Reserve at Adjustment Period—The Responsive Reserve Ancillary Service Responsibility for the Resource as seen in the last COP and Trades Snapshot at the end of the Adjustment Period, for the hour that includes the 15-minute settlement interval. |
| HRUADJ | MW | Ancillary Service Resource Responsibility Capacity for Reg-Up at Adjustment Period—The Regulation Up Ancillary Service Responsibility for the Resource as seen in the last COP and Trades Snapshot at the end of the Adjustment Period, for the hour that includes the 15-minute settlement interval. |
| HSL | MW | High Sustainable Limit Generation per QSE per Settlement Point per Resource—The High Sustainable Limit of Generation Resource r represented by QSE Q at Resource Node SP for the hour that includes the 15-minute Settlement Interval. |
| K1 | Scalar | The percentage tolerance for over-generation, 5%. |
| K2 | Scalar | The percentage tolerance for under-generation, 5%. |
| K3 | Scalar | The percentage tolerance for over- performance when an ESR will be treated as an ESR, 3%. |
| K4 | Scalar | The percentage tolerance for under- performance, 3%. |
| KIRR | Scalar | The percentage tolerance for over-generation of an IRR, 5%. |
| KLR1 | Scalar | The percentage tolerance for over-consumption of a Controllable Load Resource, 15% when the CLR has Ancillary Service responsibility. |
| KLR1\_NOAS | Scalar | The percentage tolerance for over-consumption of a Controllable Load Resource, 25% when the CLR does not have Ancillary Service responsibility |
| KLR2 | Scalar | The percentage tolerance for under-consumption of a Controllable Load Resource, 10% when the CLR has Ancillary Service responsibility. |
| KLR2\_NOAS | Scalar | The percentage tolerance for under-consumption of a Controllable Load Resource, 15%, when the CLR does not have Ancillary Service responsibility. |
| KP | Scalar | The coefficient applied to the Settlement Point Price for under-generation charge, 1.0. |
| KP1 | Scalar | The coefficient applied to the Settlement Point Price for over-consumption charge, 1.0. |
| KP2 | Scalar | The coefficient applied to the Settlement Point Price for under- performance charge, 1.0. |
| LAASIRNAMT | $ | Load-Allocated Ancillary Service Imbalance Revenue Neutrality Amount per QSE—The QSE q’s share of the total Real-Time Ancillary Service imbalance revenue neutrality amount for the 15-minute Settlement Interval. |
| LABPDAMT | $ | Load-Allocated Base-Point Deviation Amount per QSE - QSE's share of the total charge for all the Generation Resource's Base Point deviation, based on Load Ration Share, for the 15-minute Settlement interval. |
| LABSSAMT | $ | Load-Allocated Black Start Service Amount per QSE—The charge allocated to QSE Q for the Black Start Service, for the hour. |
| LACMRNZAMT | None | The net CRR Auction Revenue produced from CRRs cleared and paid for in each CRR Auction that do not source from a Settlement Point within a 2003 ERCOT CMZ and sink at a Settlement Point located within the same 2003 ERCOT CMZ shall be distributed on an ERCOT-wide LRS basis. |
| LACMRZAMT | None | The net CRR Auction Revenue produced from CRRs cleared and paid for in each CRR Auction that source from a Settlement Point within a 2003 ERCOT CMZ and sink at a Settlement Point located within the same 2003 ERCOT CMZ shall be distributed on a zonal Load Ratio Share basis |
| LACRRAMT | $ | Load-Allocated CRR Amount per QSE—The allocated surplus in the CRR Balancing Account at the end of the month to QSE q, based on Load Ratio Share for the month. |
| LADAMWAMT | $ | Day-Ahead Make-Whole Charge -The allocated charge to the QSE to make whole all the eligible DAM-committed Resources for the hour. |
| LAEMREAMT | $ | Load-Allocated Emergency Energy Amount per QSE—The QSE’s Load-Allocated amount of the total payments for all Resources with Real-Time Emergency Base Points, for the 15-minute Settlement Interval. |
| LAERSAMT | $ | Load-Allocated ERS Amount per QSE per ERS Contract Period per ERS Time Period—ERS charge for QSE q for ERS Contract Period c and ERS Time Period tp. |
| LAERSAMTQSETOT | $ | Load-Allocated ERS Amount QSE Total per QSE per ERS Contract Period—The total ERS charge for QSE q for ERS Contract Period c. |
| LAFF | $/MWh | Load Administration Fee Factor - The ERCOT System administration fee rate in dollars per MWh. |
| LAFFSSAMT | $ | Load-Allocated Firm Fuel Supply Service Amount per QSE—The charge allocated to QSE q for the FFSS, for the hour. |
| LAHDLOEAMT | $ | Load-Allocated High Dispatch Limit override energy amount per QSE—The charge to QSE q for an HDL override, for the 15-minute Settlement Interval. |
| LAMBLTAMT | $ | Presidio Exception Block Load Transfer Charge Amount |
| LARDASIRNAMT | $ | Load-Allocated Reliability Deployment Ancillary Service Imbalance Revenue Neutrality Amount per QSE—The QSE q’s share of the total Real-Time Ancillary Service imbalance revenue neutrality amount associated with Reliability Deployments for the 15-minute Settlement Interval. |
| LARMRAMT | $ | Load-Allocated Reliability Must Run Amount per QSE—The amount charged to QSE q based on its Load Ratio Share of the difference between the amount paid to all QSEs for RMR Service under this Section 6.6.6, Reliability Must Run Settlement, and the amount that would have been paid to the QSEs for the same RMR Units if they were not providing RMR Service under the other parts of this Section, Section 5, Transmission Security Analysis and Reliability Unit Commitment, and Section 4, Day-Ahead Operations, for the hour. |
| LARMROEIAMT | $ | Load Allocated RMR Other Expense Incurred Amount – The amount of other expenses incurred charged to QSE q based on its HLRS. |
| LARMRRAMT | $ | Load Allocated Reliability Must-Run Reconciled Amount – The amount of refunded capital expenditures paid to QSE q based on its HLRS. |
| LARTDASAMT | $ | Load Allocated Real-Time Derated Ancillary Service Amount per QSE—The charge to QSE q due to a manual reduction of Ancillary Services to be awarded for the 15-minute Settlement Interval. |
| LARTRNAMT | $ | Load-Allocated Real-Time Revenue Neutrality Amount per QSE — The QSE’s share of the total Real-Time revenue neutrality amount, for the 15-minute Settlement Interval. |
| LARTXXAMT | $ | Load-Allocated Real-Time AS Type Amount for the QSE - The QSE q’s share of the total Real-Time AS Type amount for the 15-minute Settlement Interval. Where 'XX' is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| LARUCAMT | $ | RUC Make-Whole Uplift Charge—The amount owed from the QSE based on Load Ratio Share, for the 15-minute Settlement Interval. |
| LARUCCBAMT | $ | RUC Clawback Payment—The RUC Make-Whole Clawback Payment to a QSE to uplift RUC Make-Whole Clawback Charges received, for a 15-minute Settlement Interval. |
| LARUCDCAMT | $ | RUC Decommitment Charge—The RUC Decommitment Charge to a QSE, for a 15-minute Settlement Interval. |
| LASPDAMT | $ | Load-Allocated Set-Point Deviation Amount per QSE - The QSE q’s share of the total charge for all Resources’ Set Point deviations, based on Load Ratio Share, for the 15-minute Settlement Interval. |
| LASUCAMT | $ | Load-Allocated Securitization Uplift Charge Amount per QSE — The charge allocated to QSE, for the QSE’s share of the total amount of Securitization Uplift Charges assessed for Operating Day. |
| LASWMWAMT | $ | Load Allocated Switchable Generation Make-Whole Charge Amount– The allocated charge to QSE q for Switchable Generation Make-Whole Payments. |
| LAVSSAMT | $ | Load-Allocated Voltage Support Service Amount per QSE—The charge to QSE Q for VSS, for the 15-minute Settlement Interval. |
| LROFLAG | Misc | LROFLAG – Flag that indicates that the Controllable Load Resource’s telemetered Resource Status is set to OUTL. Its value will be one (1) for each 15-minute Settlement Interval. Otherwise, (0). |
| LRS | None | The Load Ratio Share calculated for QSE Q for the 15-minute Settlement Interval. See Section 6.6.2.2, QSE Load Ratio Share for a 15-Minute Settlement Interval. |
| LSL | MW | Low Sustained Limit—The limit established by the QSE, continuously updated in Real-Time, that describes the minimum sustained energy production capability of the Resource for the hour that includes the Settlement Interval i. |
| LZIMBAL | MWh | Load Zone Energy Imbalance per QSE per Settlement Point — The Load Zone volumetric imbalance for QSE q for Real-Time Energy Imbalance Service at Settlement Point p for the 15-minute Settlement Interval. |
| MAXRESPR | $/MWh | Maximum Resource Price for sink—The highest Maximum Resource Price for the types of Resources located at the sink Settlement Point for the Operating Hour. |
| MBLTAMT | $ | Presidio Exception Block Load Transfer Resource Amount |
| MBLTAMTQSETOT | $ | Presidio Exception Block Load Transfer Payment Amount QSE Total |
| MBLTAMTTOT | $ | Presidio Block Load Transfer Resource Amount Market Total |
| MCPCXX (DAM) | $/MW/Hr | Market Clearing Price of Capacity for the AS Type in DAM—The DAM Market Clearing Price of Capacity for the AS Type for the hour. This bill determinant needs to be identified with a DAM Market Identifier to ensure proper classification. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| MCPCXX (M) | $/MW/Hr | Market Clearing Price for Capacity for the AS Type by market—The MCPC for the AS Type in the market M, for the hour. This bill determinant needs to be identified with a Market Identifier to ensure proper classification. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| MCPCXX (RS) | $/MW/Hr | Market Clearing Price for Capacity for the AS Type by RSASM—The MCPC for the AS Type in the RSASM RS, for the hour. This bill determinant needs to be identified with an RSASM Market Identifier to ensure proper classification. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| MEB | MWh | Metered Energy at bus—The metered energy by the settlement meter which is not upstream from another Settlement Meter which measures ESR Load for the 15-minute Settlement Interval. A positive value represents energy produced, and a negative value represents energy withdrawn. |
| MEBC | MWh | Metered Energy at bus (calculated) - The calculated energy for the 15-minute Settlement Interval for a Settlement Meter which is upstream from another Settlement Meter which measures ESR Load. A positive value represents energy produced, and a negative value represents energy withdrawn. |
| MEBL | MWh | Metered Energy for Wholesale Storage Load at Bus — The WSL energy metered by the Settlement Meter which measures WSL for the 15-minute Settlement Interval represented as a negative value, for the QSE q, Resource r, at a bus b. |
| MEBR | MWh | Metered Energy for Energy Storage Resource Load at Bus – The energy metered by the Settlement meter which measures Non-WSL ESR Charging Load for the 15-minute Settlement Interval represented as a negative value, for the QSE q, Resource r, at bus b. |
| MEBSOG | MWh | Metered energy at bus for an SODG or SOTG Site – The metered energy by the Settlement Meter(s) at Electrical Bus b for SODG or SOTG site gsc represented by QSE q. A positive value represents energy produced, and a negative value represents energy consumed. |
| MEBSOGNET | MWh | Net Metered energy at gsc for an SODG or SOTG Site – The net sum for all Settlement Meters for SODG or SOTG site gsc represented by QSE q. A positive value indicates an injection of power to the ERCOT System. |
| MEO | $/MWh | Minimum-Energy Offer per QSE per Resource per Settlement Point—The Minimum-Energy Offer included in the Three-Part Supply Offer associated with Resource r at Resource Node p represented by QSE q, for the hour h that includes the settlement interval i. |
| MEPR | $/MWh | Minimum-Energy Price—The settlement price for minimum energy for the Settlement Interval i. |
| MINRESPR | $/MWh | Minimum Resource Price—The lowest Minimum Resource Price for the types of Resources located at the source Settlement Point. |
| MLRS | None | Monthly Load Ration share per QSE—The LRS calculated for QSE q for the 15-minute monthly peak-load Settlement Interval. |
| MRMRCE | $ | Monthly Reliability Must-Run Capital Expenditure Refund – The lump sum amount of contributed capital expenditures for the month m refunded to ERCOT per Section 3.14.1.19 pro-rated over the number of months of the RMR Agreement. |
| NCDCHR | Misc | Number of Continuous De-committed Hours— The number of continuous decommitment hours within an Operating Day. |
| NDRTOBLAMT | $ | No DAM Real-Time Obligation Amount per CRR Owner per pair of source and sink—The payment or charge to CRR Owner o for its PTP Obligations with the source j and the sink k settled in Real-Time when ERCOT is unable to execute the DAM, for the hour. |
| NDRTOBLAMTOTOT | $ | No DAM Real-Time Obligation Amount Owner Total per CRR Owner—The net total payment or charge to CRR Owner o of all its PTP Obligations settled in Real-Time when ERCOT is unable to execute the DAM, for the hour. |
| NDRTOBLRAMT | $ | No DAM Real-Time Obligation with Refund Amount per CRR Owner per pair of source and sink. The payment to CRR Owner for the PTP Obligation with Refund with the source j and the sink k, settled in Real-Time, when ERCOT is unable to execute the DAM, for the hour. |
| NDRTOBLRAMTOTOT | $ | No DAM Real-Time Obligation with Refund Amount Owner Total per CRR Owner—The net total payment or charge to CRR Owner o for all its PTP Obligations with Refund settled in Real-Time, when ERCOT is unable to execute the DAM, for the hour. |
| NDRTOBLRTP | $ | No DAM Real-Time Obligation with Refund Target Payment per CRR Owner per source and sink pair—The target payment for CRR Owner o’s PTP Obligations with Refund, with the source j and the sink k, settled in Real-Time, when ERCOT is unable to execute the DAM, for the hour. |
| NDRTOPTAMT | $ | No DAM Real-Time Option Amount per CRR Owner per source and sink pair —The payment to CRR Owner o of PTP Options with the source j and the sink k settled in Real-Time when ERCOT is unable to execute the DAM, for the hour. |
| NDRTOPTAMTOTOT | $ | No DAM Real-Time Option Amount Owner Total per CRR Owner—The total payment to CRR Owner o for all its PTP Options settled in Real-Time when ERCOT is unable to execute the DAM, for the hour. |
| NDRTOPTRAMT | $ | No DAM Real-Time Option with Refund Amount per CRR Owner per pair of source and sink—The payment to CRR Owner o of the PTP Options with Refund with the source j and the sink k, settled in Real-Time when ERCOT is unable to execute the DAM, for the hour. |
| NDRTOPTRAMTOTOT | $ | No DAM Real-Time Option with Refund Amount Owner Total per CRR Owner—The total payment to NOIE CRR Owner o for all its PTP Options with Refund settled in Real-Time when ERCOT is unable to execute the DAM, for the hour. |
| NDRTOPTRTP | $ | No DAM Real-Time Option with Refund Target Payment per CRR Owner per source and sink pair—The target payment for CRR Owner o’s PTP Options with Refund, with the source j and the sink k, settled in Real-Time when ERCOT is unable to execute the DAM, for the hour. |
| NDRTOPTTP | $ | No DAM Real-Time Option Target Payment per CRR Owner per source and sink pair—The target payment for CRR Owner o’s PTP Options with the source j and the sink k settled in Real-Time when ERCOT is unable to execute the DAM, for the hour. |
| NETVSSA | MWh | Net VSS Activity—The sum of the total energy metered by the Settlement Meter which measures ESR load and the RTMG, for Resource *r* represented by the QSE *q* for the 15-minute Settlement Interval. |
| NMRTETOT | MWh | Net Meter Real-Time Energy Total— The net sum for all settlement meters included in net metering arrangement a. A positive value indicates an injection of power to the ERCOT system, and a negative value indicates a withdrawal of power from the ERCOT system. |
| NMSAMTTOT | $ | Net Metering Settlement Payment—The total payment to the entire facility with a net metering arrangement. |
| NSPOSADJ | MW | Non-Spin Reserve Service Position at End of Adjustment Period ¾The QSE q’s net positive Non-Spin Ancillary Service Position at the end of the Adjustment Period for the hour h that includes the 15-minute Settlement Interval. |
| NSPOSSNAP | MW | Non-Spin Reserve Service Position at Snapshot ¾The QSE q’s net positive Real-Time Non-Spin Ancillary Service Position according to the RUC Snapshot for the RUC process ruc for the hour h that includes the 15-minute Settlement Interval. |
| OBLDRPR | $/MW/Hr | Obligation Deration Price per source and sink pair—The deration price of a PTP Obligation with the source and sink pair, for the hour. |
| OBLLOCRR | MW | Obligation with Links to an Option per QSE per pair of source and sink per CRR ID and CRR OFFER ID– The total MW of QSE q’s PTP Obligation bids with Links to an Option cleared in the DAM for the source j and the sink k for the hour, CRRID, and CRROFFERID. |
| OBLRACT | MW | Obligation with Refund Actual usage per CRR Owner per pair of source and sink—CRR Owner’s actual usage for the PTP Obligations with Refund with the source and sink pair, for the hour. |
| OCONSM | MWh | Over-Consumption Volumes per QSE per Settlement Point per Controllable Load Resource—The amount over-consumed by the Controllable Load Resource r represented by QSE q at Settlement Point p for the 15-minute Settlement Interval i. |
| OFFQSADJ | Misc | OFFQS Flag at End of Adjustment Period—The flag that indicates the COP Operating Status of “OFFQS” has been submitted to ERCOT for the hour at the end of Adjustment Period. |
| OFFQSSNAP | Misc | OFFQS Flag at End of Adjustment Period—The flag that indicates the COP Operating Status of “OFFQS” has been submitted to ERCOT for the hour as seen in the COP & Trades Snapshot for the RUC Process. |
| OGEN | MWh | Over Generation Volumes per QSE per Settlement Point per Resource—The amount over-generated by the Generation Resource R represented by QSE Q at Resource Node SP for the 15- minute Settlement Interval I. |
| OGENIRR | MWh | Over Generation Volumes per QSE per Settlement Point per IRR Generation Resource—The amount over-generated by the IRR represented by QSE Q at Resource Node SP for the 15- minute Settlement Interval I. |
| OILPERME | Misc | Percent Oil – The percentage of fuel used by the resource to operate at minimum-energy that will be oil. |
| OILPERSU | Misc | Percent Oil – The percentage of fuel used by the resource to startup that will be oil, for each start type. |
| ONDSRFLAG | Misc | On-Line Dynamically Scheduled Resource Flag – Flag that indicates when a Dynamically Scheduled Resource in On-Line. Its value will be one (1) for each 15-minute Settlement Interval when the Resource is Dynamically Schedule and On-Line; otherwise zero (0). |
| OPC | $ | Operational Cost – The Operational Cost for the Resource r for the Operating Day d in the non-ERCOT Control Area. The operating costs represent the costs the Resource would have incurred to generate the awarded energy in the non-ERCOT Control Area Day-Ahead market absent a request to switch to ERCOT. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| OPESR | MWh | Over-Performance Volumes per QSE per Settlement Point per Resource - The amount the ESR r over-performed, represented by QSE q at Resource Node p, for the 15-minute Settlement Interval i. |
| OPT | MW | PTP Option – The number of CRR Owner’s PTP Options, acquired through PCRR Allocations, CRR Auctions and CRR Bilateral Trades, with the source and sink pair, prior to DAM execution, for the Operating Hour. |
| OPTDRPR | $/MW/Hr | Option Deration Price per source and sink pair—The deration price of a PTP Option with the source and the sink, for the hour. |
| OPTR | MW | PTP Option with Refund – The number of NOIE CRR Owner’s PTP Options with Refund, acquired through PCRR Allocations by NOIEs, with the pair of source and sink, prior to DAM execution, for the Operating Hour. |
| OPTRACT | MW | Option with Refund Actual usage per CRR Owner per pair of source and sink—CRR Owner’s actual usage for the PTP Options with Refund with the pair of source and sink, for the hour. |
| OSAMW | $ | OSA Make-Whole Cost—The OSA Make-Whole cost for Resource r represented by QSE q during the eligible rescheduled Outage Hours, for the Operating Day d. When one or more Combined Cycle Generation Resources receives an OSA, the Make-Whole cost is calculated for the Combined Cycle Train for the OSA Period. |
| PAHR | MMBtu/MWh | Proxy Average Heat Rate- The proxy average heat rate for the Resource r for the 15-minute Settlement Interval i. Where for a Combined Cycle Train, the Resource r is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| PCRRNZREV | None | Calculate PCRR Zonal Revenue per 2003 ERCOT CMZ per CRR Auction for PCRR PTP Obligations and PCRR PTP Options for which source and sink are located in the same 2003 ERCOT CMZ, pertaining to each CRR Auction |
| PCRRZREV | None | Calculate PCRR non-Zonal Revenue per 2003 ERCOT CMZ per CRR Auction for PCRR PTP Obligations and PCRR PTP Options for which source and sink are located in multiple 2003 ERCOT CMZ’s, pertaining to each CRR Auction |
| PCXX | MW | Procured Capacity for the AS Type by QSE by market—The total AS Type Service capacity quantity awarded to QSE Q in the DAM for all the Resources represented by this QSE for the hour. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| PCXXAMT | $ | Procured Capacity for the AS Type Amount per QSE in DAM—The DAM AS Type payment for QSE Q for the hour. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| PCXXAMTTOT | $ | Procured Capacity for the AS Type Amount Total by market—The total payments to all QSEs for the Ancillary Service Offers cleared in the market M for the AS Type, for the hour. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| PCXXR | MW | Procured Capacity for the AS Type from Resource per Resource per QSE in DAM—The AS Type capacity quantity awarded to QSE Q in the DAM for Resource R for the hour. Where for a Combined Cycle Train, the Resource R is a Combined Cycle Generation Resource within the Combined Cycle Train. This bill determinant needs to be identified with a Market Identifier to ensure proper classification. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| PR1 | $/MWh | The minimum price to use for the charge calculation when RTSPP is positive, $20.00 |
| PR2 | $/MWh | The minimum price to use for the charge calculation when RTSPP is negative, $-20.00 |
| PR3 | $/MWh | The price to use for the Set Point Deviation Charge for over- performance when RTSPP is less than $20/MWh. |
| PR4 | $/MWh | The price to use for the Set Point Deviation Charge for under- performance when RTSPP is greater than -$20/MWh. |
| PRZ1 | $/MWh | The price to use for the charge calculation when RTSPP is greater than -$20 |
| PRZ2 | $/MWh | The price to use for the Base Point Deviation Charge for under-consumption calculation when RTSPP is less than $20 |
| PVGRPP | MW | PhotoVoltaic Generation Resource Production Potential – The generation in MWh per hour from a PVGR that could be generated from all available units of that Resource allocated from the 80% probability of exceedance of the Total ERCOT PhotoVoltaic Power Forecast (TEPPF) as seen at the time of the RUC process, for the hour that includes the 15-minute settlement interval. |
| Q1 | MW | The MW tolerance for over-generation, 5 MW. |
| Q2 | MW | The MW tolerance for under-generation, 5 MW. |
| Q3 | MW | The MW tolerance for over- performance, three MW. |
| Q4 | MW | The MW tolerance for under- performance, three MW. |
| QCLAW | Misc | QSE Clawback Interval Flag—The flag that indicates, for the resource, whether or not the settlement interval is a QSE Clawback interval. If the settlement interval is a QSE Clawback interval, its value is one; otherwise, zero. |
| QLR1 | MW | The MW tolerance for over-consumption of a Controllable Load Resource, 2 MW. |
| QLR2 | MW | The MW tolerance for under-consumption of a Controllable Load Resource, 2 MW. |
| QSFLAG | Misc | Flag that indicates that the Base Point Deviation Charge does not apply to Quick Start Generation Resources (QSGRs) during the 15-minute Settlement Interval(s) that includes any part of the first ten minutes after the start of the first SCED interval in which the QSGR is deployed. |
| RCAPADJ | MW | Resource Capacity at End of Adjustment Period—The HSL of a non-IRR Generation Resource r represented by the QSE q at the end of the Adjustment Period, for the hour h that includes the 15-minute Settlement Interval. Where for a Combined Cycle Train, the Resource r is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| RCAPSNAP | MW | Resource Capacity at Snapshot—The available capacity of Generation Resource r represented by the QSE q, according to the RUC Snapshot for the RUC process ruc for the hour h that includes the 15-minute Settlement Interval. For Generation Resources that are not IRRs, the available capacity shall be equal to HSL. For WGRs and PVGRs, the available capacity shall be equal to the lesser of the HSL or the WGRPP and the PVGRPP, respectively. Where for a Combined Cycle Train, the Resource r is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| RCGMEC | $/MWh | Resource Category Generic Minimum-Energy Cost—The Resource Category Generic Minimum Energy Cost cap for the category of the Resource, according to Section 4.4.8.2.3, Startup Offer and Minimum-Energy Offer Generic Caps, for the Operating Day. |
| RCGSC | $/Start | Resource Category Generic Startup Cost—The Resource Category Generic Startup Cost for the category of the Resource, according to Section 4.4.8.2.3, Startup Offer and Minimum-Energy Offer Generic Caps, for the Operating Day. |
| RDPOSADJ | MW | Regulation Down Position at End of Adjustment Period ¾The QSE q’s net positive Reg-Down Ancillary Service Position at the end of the Adjustment period for the hour h that includes the 15-minute Settlement Interval. |
| RDPOSSNAP | MW | Regulation Down Position at Snapshot ¾The QSE q’s net positive Real-Time Regulation Down Service (Reg-Down) Ancillary Service Position according to the RUC Snapshot for the RUC process ruc for the hour h that includes the 15-minute Settlement Interval. |
| RESMEB | MWh | Resource Share Net Meter Real-Time Energy Total — The Resource share of the net sum for all Settlement meters attributed to Resource r that is part of a generation site code gsc for the QSE q at Settlement Point p. |
| RESREV | $ | Resource Share Revenue Settlement Payment — The Resource share of the total payment to the entire Facility with a net metering arrangement attributed Resource r that is part of a generation site code gsc for the QSE q at Settlement Point p. |
| RMRAAMT | $ | RMR Adjustment Charge per QSE—The charge to QSE q for all RMR Units represented by this QSE, for the revenues received for the same RMR Units from RUC settlements and Real-Time settlements, for the hour. |
| RMRAAMTTOT | $ | RMR Adjusted Amount Total—The total of the adjusted amounts from all QSEs representing RMR Units for the revenues received for these units from RUC, Real-Time Operations and Ancillary Service Markets, for the hour. |
| RMRAFLAG | None | RMR Availability Flag per QSE per Resource by hour—The flag of the availability of RMR Unit R represented by QSE Q, 1 for available and 0 for unavailable, for the hour H. |
| RMRARF | None | Reliability Must Run Availability Reduction Factor per QSE per Resource by hour—The availability reduction factor of RMR Unit R represented by QSE Q, for the hour H. See Paragraph 3 of Section 3.14.1.13, Incentive Factor |
| RMRCCAP | MW | Reliability Must Run Contractual Capacity per QSE per Resource—The capacity of RMR Unit R represented by QSE Q as specified in the RMR Agreement. |
| RMRCE | $ | Reliability Must-Run Capital Expenditure Refund– The lump sum amount of contributed capital expenditures for the QSE q representing the RMR Unit r for the period of the RMR Agreement c to be refunded to ERCOT per Section 3.14.1.19. |
| RMRCEFA | $/MMBtu | RMR Contract Estimated Fuel Adder |
| RMRCRF | None | Reliability Must Run Capacity Reduction Factor per QSE per Resource by hour—The capacity reduction factor of the RMR Unit, for the hour. See Paragraph 2 of Section 3.14.1.13, Incentive Factor |
| RMREAMT | $ | Reliability Must Run Energy Amount per QSE per Resource by hour—The energy payment to QSE Q for RMR Unit R, for the hour h. |
| RMREAMTQSETOT | $ | Reliability Must Run Energy Amount QSE Total per QSE—The total of the energy payments to QSE Q for all RMR Units represented by this QSE for the hour. |
| RMREAMTTOT | $ | RMR Energy Amount Total—The total of the energy cost payments to all QSEs for all RMR Units, for the hour. |
| RMREH | None | Reliability Must Run Elapsed number of Hours per QSE per Resource by hour—The number of the elapsed hours of the term of the RMR Agreement for RMR Unit R represented by QSE Q, for the hour H. |
| RMRH | Hour | Reliability Must Run Hours—The number of hours during which RMR Unit r represented by QSE Q is instructed On-Line for the Operating Day. |
| RMRHR | MMBtu/MWh | Reliability Must Run Heat Rate per QSE per Resource by Settlement Interval by hour—The multiplier determined based on the input/output curve and the Real-Time generation of RMR Unit r represented by QSE q, for the 15-minute Settlement Interval i in the hour h. |
| RMRHREAF | None | Reliability Must Run Hourly Rolling Equivalent Availability Factor per QSE per Resource by hour—The equivalent availability factor of RMR Unit R represented by QSE Q over 4380 hours, for the hour H. |
| RMRIF | None | Reliability Must Run Incentive Factor—The Incentive Factor of RMR Units under RMR Agreement. This is currently set at 10%. |
| RMRMFCOST | $ | Reliability Must Run Monthly actual Fuel Cost per QSE per Resource—The monthly actual fuel cost of RMR Unit r represented by QSE q, for the month. |
| RMRMNFCC | $ | Reliability Must Run Monthly Non-Fuel Non-Capital Cost per QSE per Resource—The actual non-fuel and capital Eligible Cost of RMR Unit R represented by QSE Q, for the month. |
| RMRMNFNCC | $ | Reliability Must Run Monthly Non-Fuel Non-Capital Cost per QSE per Resource—The actual non-capital and non-fuel Eligible Cost of RMR Unit R represented by QSE Q, for the month. |
| RMRNPAMT | $ | Reliability Must Run Unexcused Misconduct Charge per QSE per Resource—The charge to QSE Q for the unexcused Misconduct Event of RMR Unit R for an Operating Day. |
| RMRNPAMTQSETOT | $ | Reliability Must Run Unexcused Misconduct Amount QSE Total per QSE—The total of the charges to QSE q for unexcused Misconduct Events of the RMR Units represented by this QSE for the Operating Day. |
| RMRNPAMTTOT | $ | RMR Non-Performance Amount Total—The total of the charges to all QSEs for unexcused misconduct events of all RMR Units, for the Operating Day. |
| RMROEIAMT | $ | RMR Other Expense Incurred Amount – The amount of expenses incurred in the validation and processing of an RMR Agreement, for the month m, that are not paid to the QSE representing the RMR Unit e.g. third-party expenses incurred in the evaluation and validation of submitted RMR budgets. |
| RMROP | $ | Reliability Must-Run Over-Payment – The amount of overpayments to the QSE q representing the RMR Unit r for the month m during the period of the RMR Agreement c to be refunded to ERCOT per Section 3.14.1.19. This amount cannot be negative. |
| RMRRAMT | $ | Reliability Must-Run Reconciled Amount – The lump sum charge to the QSE q representing the RMR Unit r that reconciles any contributed capital expenditure amounts and any over-payments to the QSE during the period of the RMR Agreement c. |
| RMRSBAMTTOT | $ | RMR Standby Amount Total—The total of the standby payments to all QSEs for all RMR Units, for the hour. |
| RMRSBPR | None | Reliability Must Run Standby Price per QSE per Resource by hour—The Standby Price for RMR Unit R represented by QSE Q for the hour H. |
| RMRSUFQ | MMBtu | Reliability Must Run Startup Fuel Quantity per QSE per Resource—The Estimated Startup Fuel specified in the RMR Agreement for RMR Unit R represented by QSE Q. |
| RMRTA | None | Reliability Must Run Target Availability per QSE per Resource—The Target Availability of RMR Unit R represented by QSE Q, as specified in the RMR Agreement and divided by 100 to convert a percentage to a fraction. |
| RMRTCAP | MW | Reliability Must Run Testing Capacity by hour—The testing capacity of RMR Unit R represented by QSE Q, for the hour H. |
| RMRTCAPA | MW | Reliability Must Run Test Capacity Adjustment—The Adjusted Amount for the Capacity Test in the event Operations determines that a Capacity Reduction does not materially affect reliability. |
| RMRVCC | $/MWh | Reliability Must Run Variable Cost Component per QSE per Resource—The monthly cost component that is used to adjust the energy cost calculation to reflect the actual fuel costs of RMR Unit R represented by QSE Q. The value is initially set to zero. |
| RNIMBAL | MWh | Resource Node Energy Imbalance per QSE per Settlement Point — The Resource Node volumetric imbalance for QSE q for Real-Time Energy Imbalance Service at Settlement Point p for the 15-minute Settlement Interval. |
| RRPOSADJ | MW | Responsive Reserve Service Position at End of Adjustment Period ¾The QSE q’s net positive RRS Ancillary Service Position at the end of the Adjustment Period for the hour h that includes the 15-minute Settlement Interval. |
| RRPOSSNAP | MW | Responsive Reserve Service Position at Snapshot ¾The QSE q’s net positive Real-Time RRS Ancillary Service Position according to the RUC Snapshot for the RUC process ruc for the hour h that includes the 15-minute Settlement Interval. |
| RRSFLAG | Misc | Responsive Reserve Flag – Flag that indicates when Responsive Reserve has been deployed by ERCOT. Its value will be one (1) for every 15-minute Settlement Interval in which ERCOT deploys Responsive Reserve; otherwise zero (0). |
| RTAML | MWh | Real-Time Adjusted Metered Load per Settlement Point per QSE by interval—The sum of the Adjusted Metered Load at the Electrical Buses that are included in the Settlement Point p, represented by QSE q for the 15-minute Settlement Interval i. |
| RTAMLESRNW | MWh | Real-Time Adjusted Metered Load for ESR Non-WSL – The sum of the AML for the Non-WSL ESR Charging Load at the Electrical Buses that are included in Settlement Point p represented by QSE q for the 15-minute Settlement Interval, represented as a positive value. |
| RTASIAMT | $ | Real-Time Ancillary Service Imbalance Amount—The total payment or charge to QSE q for the Real-Time Ancillary Service imbalance for each 15-minute Settlement Interval. |
| RTASIAMTTOT | $ | Real-Time Ancillary Service Imbalance Market Total Amount—The total payment or charge to all QSEs for the Real-Time Ancillary Service imbalance for each 15-minute Settlement Interval. |
| RTASIRD | $ | Real-Time Ancillary Service Imbalance Revenues for Deration—The additional Ancillary Service imbalance payments to QSE q for all Ancillary Service products for the 15-minute Settlement Interval. |
| RTASNET | $ | Real-Time Ancillary Service Net Revenue—The sum of the Ancillary Service net revenues for QSE q for Resource r for the 15-minute Settlement Interval. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| RTASOFF | MWh | Real-Time Ancillary Service Schedule for Off-Line Generation Resources for the QSE—The Real-Time telemetered Ancillary Service Schedule for all Off-Line Generation Resources for the QSE q, discounted by the system wide discount factor, integrated over the 15-minute Settlement Interval. |
| RTASOFFIMB | MWh | Real-Time Ancillary Service Off-Line Reserve Imbalance for the QSE—The Real-Time Ancillary Service Off-Line reserve imbalance for the QSE q, for each 15-minute Settlement Interval. |
| RTASOFFR | MWh | Real-Time Ancillary Service Schedule for the Off-Line Generation Resource—The validated Real-Time telemetered Ancillary Service Schedule for the Off-Line Generation Resource r, integrated over the 15-minute Settlement Interval. |
| RTASOLIMB | MWh | Real Time Ancillary Service On-Line Reserve Imbalance for the QSE—The Real-Time Ancillary Service On-Line reserve imbalance for the QSE q, for each 15-minute Settlement Interval. |
| RTASRESP | MW | Real-Time Ancillary Service Supply Responsibility for the QSE—The Real-Time Ancillary Service Supply Responsibility for Reg-Up, ECRS, RRS and Non-Spin pursuant to Section 4.4.7.4, Ancillary Service Supply Responsibility, for all Generation and Load Resources discounted by the system wide discount factor for the QSE q, for the 15-minute Settlement Interval. |
| RTASREV | $ | Real-Time Ancillary Service Revenue — The total Real-Time Ancillary Service revenue for QSE q calculated for Resource r for the 15-minute Settlement Interval i. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| RTCCAMT | $ | Real-Time Congestion Cost Amount per QSE per Self-Schedule—The congestion charge to the QSE for its Self-Schedule, for the 15-minute Settlement Interval. |
| RTCCAMTQSETOT | $ | Real-Time Congestion Cost Amount QSE Total per QSE- The total net congestion payments and charges to the QSE for its Self-Schedules for the 15-minute Settlement Interval. |
| RTCCAMTTOT | $ | Real-Time Energy Congestion Cost Amount Total- The total net congestion payments and charges for all of the Self-Schedules for the 15-minute Settlement Interval. |
| RTCL | MWh | Real-Time Charging Load per QSE per Resource —The charging load for Resource r represented by the QSE q, represented as a negative value, for the 15-minute Settlement Interval. |
| RTCLRCAP | MWh | Real-Time Capacity from Controllable Load Resources for the QSE—The Real-Time capacity and Reg-Up minus Non-Spin available from all Controllable Load Resources available to SCED for the QSE q, integrated over the 15-minute Settlement Interval. |
| RTCLRLPC | MWh | Real-Time Low Power Consumption from Controllable Load Resources for the QSE—The Real-Time LPC from Controllable Load Resources available to SCED integrated over the 15-minute Settlement Interval for the QSE q discounted by the system-wide discount factor. |
| RTCLRLPCR | MWh | Real-Time Low Power Consumption for the Controllable Load Resource—The Real-Time LPC from the Controllable Load Resource r available to SCED integrated over the 15-minute Settlement Interval. |
| RTCLRNPC | MWh | Real-Time Net Power Consumption from Controllable Load Resources for the QSE—The Real-Time net real power consumption from all Controllable Load Resources available to SCED integrated over the 15-minute Settlement Interval for the QSE q discounted by the system-wide discount factor. |
| RTCLRNPCR | MWh | Real-Time Net Power Consumption from the Controllable Load Resource—The Real-Time net real power consumption from the Controllable Load Resource r available to SCED integrated over the 15-minute Settlement Interval. |
| RTCLRREG | MWh | Real-Time Controllable Load Resources Regulation-Up Schedule for the QSE—The Real-Time Reg-Up Ancillary Service Schedule from all Controllable Load Resources with Primary Frequency Response for the QSE q, discounted by the system wide discount factor, integrated over the 15-minute Settlement Interval. |
| RTCLRREGR | MWh | Real-Time Controllable Load Resource Regulation-Up Schedule for the Resource—The validated Real-Time Reg-Up Ancillary Service Schedule for the Controllable Load Resource r with Primary Frequency Response, integrated over the 15-minute Settlement Interval. |
| RTCST30HSL | MWh | Real-Time Generation Resources with Cold Start Available in 30 Minutes¾The Real-Time telemetered HSLs of Generation Resources that have telemetered an OFF Resource Status and can be started from a cold temperature state in 30 minutes and discounted by the system wide discount factor for the QSE q, time-weighted over the 15-minute Settlement Interval. |
| RTDASAMT | $ | Real-Time Derated Ancillary Service Amount—The payment to QSE Q for amounts recoverable resulting from a manual reduction of Ancillary Services by ERCOT for the 15-minute Settlement Interval. |
| RTDASAMTTOT | $ | Real-Time Derated Ancillary Service Amount Total—The total of all payments to all QSEs for amounts recoverable due to an ERCOT issued manual reduction of Ancillary Services to be awarded for the 15-minute Settlement Interval. |
| RTDASCAP | $ | Real-Time Derated Ancillary Service Payment Cap—The amount recoverable for Resource r represented by QSE Q, capped by the Real-Time MCPC for the Ancillary Service product that was derated, multiplied by the quantity by which the Resource’s capability to provide the Ancillary Service was reduced for the 15-minute Settlement Interval. Where for a Combined Cycle Train, the Resource R is the Combined Cycle Train. |
| RTDCIMP | MW | Real-Time DC Import per QSE per Settlement Point—The aggregated DC Tie Schedule submitted by QSE q as an importer into the ERCOT System through DC Tie p, for the 15-minute Settlement Interval. |
| RTDCIMPAMT | $ | Real-Time DC Import Amount per QSE per Settlement Point—The payment to QSE q for DC Tie import through DC Tie p, for the 15-minute Settlement Interval. |
| RTDCIMPAMTQSETOT | $ | Real-Time DC Import Amount QSE Total per QSE—The total of the payments to QSE q for energy imported into the ERCOT System through DC Ties for the 15-minute Settlement Interval. |
| RTDCIMPAMTTOT | $ | Real-Time DC Import Amount Total—The summation of payments for DC Tie import, for the 15-minute Settlement Interval. |
| RTEDCIMP | MW | Real-Time Emergency DC Import – The aggregated DC Tie Schedule for emergency energy imported by QSE q into the ERCOT System during emergency conditions through DC Tie p, for the 15-minute Settlement Interval. |
| RTEIAMT | $ | Real-Time Energy Imbalance Amount per QSE per Settlement Point—The payment or charge to QSE Q for the Real-Time Energy Imbalance at Settlement Point SP, for the 15-minute Settlement Interval. |
| RTEIAMTQSETOT | $ | Real-Time Energy Imbalance Amount QSE Total per QSE per Settlement Point—The total net payments and charges to the QSE for Real-Time Energy Imbalance at the Settlement Point, for the 15-minute Settlement Interval. |
| RTEIAMTTOT | $ | Real-Time Energy Imbalance Amount Total - The Total net payments and charges for Real-Time Energy Imbalance at all Settlement Points (Resource, Load Zone, or Hub) for the 15-Minute Interval. |
| RTEIRD | $ | Real-Time Energy Imbalance Revenues for Deration—The additional payments to QSE Q under Section 6.6.3.1. |
| RTENET | $ | Real-Time Energy Net Revenue—The net difference between the Real-Time Energy Revenue and the Real-Time Energy Revenue Target for QSE q for Resource r at Resource node p for the 15-minute Settlement Interval. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| RTEOCOST | $/MWh | Real-Time Energy Offer Curve Cost Cap—The Energy Offer Curve Cost Cap for Resource r represented by QSE q for the Resource’s generation above the LSL for the Settlement Interval i. See Section 4.4.9.3.3. Energy Offer Curve Cost Caps. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| RTEREV | $ | Real-Time Energy Revenue—The calculated Real-Time energy revenue at the RTSPP for QSE q calculated for Resource r at Resource node p for the 15-minute Settlement Interval. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| RTEREVT | $ | Real-Time Energy Revenue Target—The energy revenue target at the EBPWAPRGEN and EBPWAPRLOAD of the Resource r represented by QSE q, for the 15-minute Settlement Interval. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| RTESOGAMTQSETOT | $ | Real-Time Energy Payment or Charge per QSE for Energy from SODGs and SOTGs – The payment or charge to QSE q for Real-Time energy from SODGs and SOTGs, for the 15-minute Settlement Interval. |
| RTESOGAMTTOT | $ | Real-Time Energy Amount Total for Energy from all SODGs and SOTGs – The total net payments and charges to all QSEs for Real-Time energy from SODGs and SOTGs, for the 15-minute Settlement Interval. |
| RTESOGPR | $/MWh | Real-Time Price for the Energy Metered for each SODG or SOTG Site – The Real-Time price at Electrical Bus b for the Settlement Meter for the SODG or SOTG site for the 15-minute Settlement Interval. |
| RTESOGSAMT | $ | Real-Time Energy for SODG and SOTG Site Amount – The total payment or charge to QSE q for SODG or SOTG site gsc for the 15-minute Settlement Interval. |
| RTMCPCXX | $/MW | Real-Time Market Clearing Price for Capacity for applicable AS Type - The Real-Time MCPC for the applicable AS Type for the 15-minute Settlement Interval. Where 'XX' is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| RTMCPCXXR | $/MW | Real-Time Market Clearing Price for Capacity for applicable AS Type per Resource per QSE - The Real-Time MCPC for the applicable AS Type for Resource r, represented by QSE q for the 15-minute Settlement Interval. Where 'XX' is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| RTMG | MWh | Real-Time Metered Generation per QSE per Settlement Point per Resource—The Real-Time energy produced by the Resource r represented by QSE q at Resource Node p, for the 15-minute Settlement Interval. |
| RTMGA | MWh | Real-Time Adjusted Metered Generation per QSE per Settlement Point per Resource—The adjusted metered generation, pursuant to paragraphs (3) and (4) above, of Generation Resource r at Resource Node p represented by QSE q in Real-Time for the 15-minute Settlement Interval. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| RTMGQ | MWh | Real-Time Metered Generation per QSE—The metered generation, discounted by the system wide discount factor, of all generation Resources represented by QSE q in Real-Time for the 15-minute Settlement Interval, discounted by the system wide discount factor, pursuant to paragraphs (3) and (4) above. |
| RTMGSOGZ | MWh | Real-Time Metered Generation from Settlement Only Generators Zonal per QSE per Settlement Point—The total Real-Time energy produced by SOTGs represented by QSE q in Load Zone Settlement Point p, for the 15-minute Settlement Interval. MWh quantities for ESS SODGs and SOTGs at sites where the ESS capacity constitutes more than 50% of the total SOG nameplate capacity will be included in this value. MWh quantities for SODGs and SOTGs that opted out of nodal pricing pursuant to Section 6.6.3.9 will also be included in this value. |
| RTNCLRCAP | MWh | Real-Time Capacity from Non-Controllable Load Resources carrying Responsive Reserve for the QSE – The Real-Time capacity for all Load Resources other than Controllable Load Resources that have a validated Real-Time ECRS or RRS Ancillary Service Schedule for the QSE q, integrated over the 15-minute Settlement Interval. |
| RTNCLRECRS | MWh | Real-Time Non-Controllable Load Resources ERCOT Contingency Reserve for the QSE—The validated Real-Time telemetered ECRS Ancillary Service Supply Responsibility for all Load Resources other than Controllable Load Resources for QSE q discounted by the system-wide discount factor, integrated over the 15-minute Settlement Interval. |
| RTNCLRECRSR | MWh | Real-Time Non-Controllable Load Resource ERCOT Contingency Reserve —The validated Real-Time telemetered ECRS Ancillary Service Resource Responsibility for the Load Resource r (which is not a Controllable Load Resource) represented by QSE q at Resource Node p, integrated over the 15-minute Settlement Interval. |
| RTNCLRLPC | MWh | Real-Time Non-Controllable Load Resource Low Power Consumption for the QSE—The Real-Time LPC from all Load Resources other than Controllable Load Resources for QSE q that have a validated Real-Time ECRS, RRS, or Non-Spin Ancillary Service Schedule integrated over the 15-minute Settlement Interval discounted by the system-wide discount factor. |
| RTNCLRLPCR | MWh | Real-Time Non-Controllable Load Resource Low Power Consumption—The Real-Time Low Power Consumption (LPC) from the Load Resource r (which is not a Controllable Load Resource) that has a validated Real-Time ECRS, RRS, or Non-Spin Ancillary Service Schedule integrated over the 15-minute Settlement Interval |
| RTNCLRNPC | MWh | Real-Time Non-Controllable Load Resource Net Power Consumption for the QSE—The Real-Time net real power consumption from all Load Resources other than Controllable Load Resources for QSE q that have a validated Real-Time ECRS, RRS, or Non-Spin Ancillary Service Schedule integrated over the 15-minute Settlement Interval discounted by the system-wide discount factor. |
| RTNCLRNPCR | MWh | Real-Time Non-Controllable Load Resource Net Power Consumption—The Real-Time net real power consumption from the Load Resource r (which is not a Controllable Load Resource) that has a validated Real-Time ECRS, RRS, or Non-Spin Ancillary Service Schedule integrated over the 15-minute Settlement Interval. |
| RTNCLRNS | MWh | Real-Time Non-Spin Schedule for Non-Controllable Load Resources for the QSE-The Real-Time telemetered Non-Spin Ancillary Service Schedule for all Load Resources that are not Controllable Load Resources for the QSE q, integrated over the 15-minute Settlement Interval discounted by the system-wide discount factor. |
| RTNCLRNSCAP | MWh | Real-Time Capacity from Non-Controllable Load Resources carrying Non-Spin for the QSE—The Real-Time capacity for all Load Resources that are not Controllable Load Resources and that have a validated Real-Time Non-Spin Ancillary Service Schedule for the QSE q, integrated over the 15-minute Settlement Interval. |
| RTNCLRNSR | MWh | Real-Time Non-Spin Schedule for the Non-Controllable Load Resource -The validated Real-Time telemetered Non-Spin Ancillary Service Schedule for the Load Resource r that is not a Controllable Load Resources represented by QSE q at Resource Node p, integrated over the 15-minute Settlement Interval. |
| RTNCLRNSRESP | MWh | Real-Time Non-Controllable Load Resource Non-Spin Responsibility for the QSE-The Real Time telemetered Non-Spin Ancillary Service Supply Responsibility for all Load Resources that are not Controllable Load Resources discounted by the system-wide discount factor for the QSE q, integrated over the 15-minute Settlement Interval. |
| RTNCLRNSRESPR | MWh | Real-Time Non-Controllable Load Resource Non-Spin Responsibility for the Resource-The Real-Time telemetered Non-Spin Ancillary Service Resource Responsibility for the Load Resource r that is not a Controllable Load Resource represented by QSE q at Resource Node p integrated over the 15-minute Settlement Interval. |
| RTNCLRRRS | MWh | Real-Time Non-Controllable Load Resources Responsive Reserve for the QSE—The validated Real-Time telemetered RRS Ancillary Service Supply Responsibility for all Load Resources other than Controllable Load Resources for the QSE q discounted by the system wide discount factor, integrated over the 15-minute Settlement Interval. |
| RTNCLRRRSR | MWh | Real-Time Non-Controllable Load Resource Responsive Reserve—The validated Real-Time telemetered RRS Ancillary Service Resource Responsibility for the Load Resource r (which is not a Controllable Load Resource) represented by QSE q at Resource Node p, integrated over the 15-minute Settlement Interval. |
| RTOBL | MW | Real-Time Obligation per QSE per pair of source and sink-The total MW of the QSE’s PTP Obligation Bids cleared in the DAM for the source and the sink for the hour. |
| RTOBLAMT | $ | Real-Time Obligation Amount per QSE per pair of source and sink—The payment or charge to QSE q for the PTP Obligations with the source and sink pair settled in Real-Time, for the hour. |
| RTOBLAMTQSETOT | $ | Real-Time Obligation Amount QSE Total per QSE—The net total payment or charge to QSE of all its PTP Obligations settled in Real-Time, for the hour. |
| RTOBLAMTTOT | $ | Real-Time Obligation Amount Total—The sum of all payments and charges for PTP Obligations settled in Real-Time, for the hour that includes the 15-minute Settlement Interval. |
| RTOBLLO | MW | Real-Time Obligation with Links to an Option per QSE per pair of source and sink—The total MW of QSE q’s PTP Obligation with Links to an Option cleared in the DAM and settled in RTM for the source j and the sink k for the hour. |
| RTOBLLOAMT | $ | Real-Time Obligation with Links to an Option Amount—The payment to QSE q for its PTP Obligations with Links to an Option with the source j and the sink k settled in Real-Time, for the hour. |
| RTOBLLOAMTQSETOT | $ | Real-Time Obligation with Links to an Option Amount QSE Total—The net total payment to QSE q for all its PTP Obligations with Links to an Option with the source j and the sink k settled in Real-Time, for the hour. |
| RTOBLLOAMTTOT | $ | Real-Time Obligation with Links to an Option Amount Total—The sum of all payments for PTP Obligations with Links to an Option settled in Real-Time, for the hour that includes the 15-minute Settlement Interval. |
| RTOBLPR | $/MW/Hr | Real-Time Obligation Price—The Real-Time price of the PTP Obligation, for the hour. |
| RTOFFCAP | MWh | Real-Time Off-Line Reserve Capacity for the QSE—The Real-Time reserve capacity of Off-Line Resources available for the QSE q, for the 15-minute Settlement Interval. |
| RTOFFNSHSL | MWh | Real-Time Generation Resources with Off-Line Non-Spin Schedule—The Real-Time telemetered HSLs of Generation Resources that have telemetered an OFFNS Resource Status, time-weighted over the 15-minute Settlement Interval. |
| RTOLCAP | MWh | Real-Time On-Line Reserve Capacity for the QSE—The Real-Time reserve capacity of On-Line Resources available for the QSE q, for the 15-minute Settlement Interval. |
| RTOLHSL | MWh | Real-Time On-Line High Sustained Limit for the QSE—The Real-Time telemetered HSL for all Generation Resources available to SCED, pursuant to paragraphs (3) and (4) above, discounted by the system wide discount factor, integrated over the 15-minute Settlement Interval for the QSE q. |
| RTOLHSLR | MWh | Real-Time On-Line High Sustained Limit for the Resource—The Real-Time telemetered HSL for the Resource that is available to SCED, integrated over the 15-minute Settlement Interval. |
| RTOLHSLRA | MWh | Real-Time Adjusted On-Line High Sustained Limit for the Resource-The Real-Time telemetered HSL for the Resource that is available to SCED, integrated over the 15-minute Settlement Interval, and adjusted pursuant to paragraphs (3) and (4) above |
| RTOPTPR | $/MW/Hr | Real-Time Option Price per source and sink pair —The Real-Time price of a PTP Option with the source and sink pair for the hour. |
| RTPCXX | MW | Procured Capacity for the AS Type per QSE by market—The MW portion of QSE Q’s Ancillary Service Offers cleared in the market M to provide AS type, for the hour. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| RTPCXXAMT | $ | Procured Capacity for the AS Type Amount per QSE by market—The payment to QSE Q for its Ancillary Service Offers cleared in the market M for the AS Type, for the hour. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| RTPCXXAMTQSETOT | $ | Procured Capacity for the AS Type Amount Total per QSE—The total payments to a QSE Q in all SASMs and RSASMs for the Ancillary Service Offers cleared for the AS type, for the hour. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| RTPCXXAMTTOT | $ | Procured Capacity for the AS Type Amount Total by market—The total payments to all QSEs for the Ancillary Service Offers cleared in the market M for the AS type, for the hour. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| RTPERFIPME | % | Real-Time Percentage FIP for Minimum-Energy—The percentage of the FIP to the extent that the minimum-energy will be supplied by gas, as submitted in the Three-Part Supply Offer. |
| RTPERFOPME | % | Real-Time Percentage FOP for Minimum-Energy—The percentage of the FOP to the extent that the minimum-energy will be supplied by oil, as submitted in the Three-Part Supply Offer. |
| RTQQEP | MW | Real-Time QSE-to-QSE Energy Purchase per QSE per Settlement point – the amount of MW bought by the QSE through Energy Trades at the Settlement Point, for the 15-Minute Settlement Interval |
| RTQQEPADJ | MW | QSE-to-QSE Energy Purchase by QSE by point—The QSE q’s Energy Trades in which the QSE is the buyer at the delivery Settlement Point p for the 15-minute Settlement Interval, in the last COP and Trades Snapshot at the end of the Adjustment Period for that Settlement Interval. |
| RTQQEPSNAP | MW | QSE-to-QSE Energy Purchase by QSE by point—The QSE q’s Energy Trades in which the QSE is the buyer at the delivery Settlement Point p for the 15-minute Settlement Interval, in the COP and Trades Snapshot. |
| RTQQES | MW | Real-Time QSE-to-QSE Energy Sales per QSE per Settlement point – the amount of MW Sold by the QSE through Energy Trades at the Settlement Point, for the 15-Minute Settlement Interval |
| RTQQESADJ | MW | QSE-to-QSE Energy Sale by QSE by point—The QSE q’s Energy Trades in which the QSE is the seller at the delivery Settlement Point p for the 15-minute Settlement Interval, in the last COP and Trades Snapshot at the end of the Adjustment Period for that Settlement Interval. |
| RTQQESSNAP | MW | QSE-to-QSE Energy Sale by QSE by point—The QSE q’s Energy Trades in which the QSE is the seller at the delivery Settlement Point p for the 15-minute Settlement Interval, in the COP and Trades Snapshot. |
| RTRDASIAMT | $ | Real-Time Reliability Deployment Ancillary Service Imbalance Amount—The total payment or charge to QSE q for the Real-Time Ancillary Service imbalance associated with Reliability Deployments for each 15-minute Settlement Interval. |
| RTRDASIAMTTOT | $ | Real-Time Reliability Deployment Ancillary Service Imbalance Market Total Amount—The total payment or charge to all QSEs for the Real-Time Ancillary Service imbalance associated with Reliability Deployments for each 15-minute Settlement Interval. |
| RTRDP | $/MWh | Real-Time On-Line Reliability Deployment Price -The Real-Time price for the 15-minute Settlement Interval, reflecting the impact of reliability deployments on energy prices that is calculated from the Real-time On-Line Reliability Deployment Price Adder. |
| RTRDRUCRSVAMT | $ | Real-Time Reliability Deployment RUC Ancillary Service Reserve Amount—The total payment to QSE q for the Real-Time RUC Ancillary Service Reserve payment associated with Reliability Deployments for each 15-minute Settlement Interval. |
| RTRDRUCRSVAMTTOT | $ | Real-Time Reliability Deployment Ancillary Service Reserve Market Total Amount—The total payment to all QSEs for Real-Time RUC Ancillary Service Reserve payment associated with Reliability Deployments for each 15-minute Settlement Interval. |
| RTRMPR | $/MWh | Real-Time Price for the Energy Metered for each resource meter at bus—The Real-Time Price for the settlement meter at Electrical Bus b, for the 15-minute Settlement Interval. |
| RTRMPRESR | $/MWh | Real-Time Price for the Energy Metered as Energy Storage Resource Load at bus — The Real-Time price for the Settlement Meter which measures ESR Load at Electrical Bus b, for the 15-minute Settlement Interval. |
| RTRMRRESP | MWh | Real-Time Ancillary Service Supply Responsibility for RMR Units represented by the QSE—The Real-Time Ancillary Service Supply Responsibility as set forth in the end of the Adjustment Period COP for Reg-Up, ECRS, RRS and Non-Spin for all RMR Units discounted by the system wide discount factor for the QSE q, integrated over the 15-minute Settlement Interval. |
| RTRSVPOFF | $/MWh | Real-Time Reserve Price for Off-Line Reserves—The Real-Time Reserve Price for Off-Line Reserves for the 15-minute Settlement Interval. |
| RTRSVPOR | $/MWh | Real-Time Reserve Price for On-Line Reserves—The Real-Time Reserve Price for On-Line Reserves for the 15-minute Settlement Interval. |
| RTRUCASA | MW | Real-Time RUC Ancillary Service Awards – The Real-Time Ancillary Service Award to the RUC Resource for Reg-Up, ECRS, RRS, and Non-Spin for the 15-minute settlement interval that falls within a RUC hour for the QSE. |
| RTRUCNBBRESP | MWh | Real-Time RUC Ancillary Service Supply Responsibility for the QSE in Non-Buy-Back hours —The Real-Time Ancillary Service Supply Responsibility for Reg-Up, RRS, and Non-Spin for the Resource per the Ancillary Service awards, for the 15-minute settlement interval that falls within a RUC hour, discounted by the system wide discount factor for the QSE q. |
| RTRUCRESP | MWh | Real-Time RUC Ancillary Service Supply Responsibility for the QSE—The Real-Time Ancillary Service Supply Responsibility rtrper the Ancillary Service awards for Reg-Up, RRS, and Non-Spin for all RUC Resources that have opted out per 5.5.2 paragraph (11)(a) for the 15-minute Settlement Interval |
| RTRUCRSVAMT | $ | Real-Time RUC Ancillary Service Reserve Amount—The total payment to QSE q for the Real-Time RUC Ancillary Service Reserve payment for each 15-minute Settlement Interval. |
| RTRUCRSVAMTTOT | $ | Real-Time RUC Ancillary Service Reserve Market Total Amount—The total payment to all QSEs for the Real-Time RUC Ancillary Service reserve amount for each 15-minute Settlement Interval. |
| RTSAXXQ | MW | Self-Arranged AS Type Quantity per QSE for all SASMs— The sum of all Self-Arranged AS Type Quantities submitted by QSE Q for all SASMs. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| RTSPP | $/MWh | Real-Time Settlement Point Price per Settlement Point—The Real-Time Settlement Point Price at Settlement Point p, for the 15-minute Settlement Interval. |
| RTSPPEW | $/MWh | Real-Time Settlement Point Price per Settlement Point Energy-Weighted—The Real-Time Settlement Point Price at Settlement Point p, for the 15-minute Settlement Interval, that is weighted by the state estimated Load of the Load Zone of each SCED interval within the 15-minute Settlement Interval. |
| RTVAR | MVARh | Real-Time var per QSE per Resource—The netted Reactive Energy measured for Generation Resource R represented by QSE Q, for the 15-minute Settlement Interval. |
| RTXXAMT | $ | Real-Time AS Type Amount per QSE—The adjustment to QSE Q’s share of the costs for the AS type, for the hour. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| RTXXAWD | MW | Real-Time AS Type Award per Resource per QSE - The AS Type amount awarded to QSE q for Resource r in Real-Time for the 15-minute Settlement Interval. Where 'XX' is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| RTXXDQ | MW | Real-Time AS Type Derated Quantity—The AS type quantity manually reduced by ERCOT for the Resource R represented by QSE Q for the 15-minute Settlement Interval. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. For a Combined Cycle Generation Resource, the Resource R is the Combined Cycle Train. |
| RTXXILD | $ | Real-Time Derated AS Type Imbalance Losses for Deration—The payments not made to QSE Q under paragraph (1) of the applicable AS type Payments and Charges protocol section (Section 6.7.5.2 thru 6.7.5.5), for the 15-minute Settlement Interval. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| RTXXIMBAMT | $ | Real-Time AS Type Imbalance Amount for the QSE - The total payment or charge to QSE q for the Real-Time AS Type imbalance for each 15-minute Settlement Interval. Where 'XX' is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| RTXXIMBAMTTOT | $ | Real-Time AS Type Imbalance Market Total Amount - The total payment or charge to all QSEs for the Real-Time AS Type imbalance for each 15-minute Settlement Interval. Where 'XX' is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| RTXXNET | $ | Real-Time AS Type Net Revenue—The difference between the Real-Time AS Type Revenue and the Real-Time AS Type Revenue Target for QSE q for Resource r for the 15-minute Settlement Interval. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. For a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| RTXXOAMT | $ | Real-Time AS Type Only Amount for the QSE - The total charge to QSE q in Real-Time for the applicable AS Type Only awards for each 15-minute Settlement Interval. Where 'XX' is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| RTXXOAMTTOT | $ | Real-Time AS Type Only Market Total Amount - The total charge to all QSEs in Real-Time for the applicable AS Type only awards for each 15-minute Settlement Interval. Where 'XX' is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| RTXXREV | $ | Real-Time AS Type Revenue — The Real-Time revenue for the applicable AS type for QSE q calculated for Resource r for the 15-minute Settlement Interval i. See Section 6.7.5. Where 'XX' is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| RTXXREVT | $ | Real-Time AS Type Revenue Target—The revenue target of the AS type award to Resource r at Resource Node p represented by QSE q based on the Ancillary Service Offer for the 15-minute Settlement Interval. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. For a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| RTXXTO | MW | Real-Time AS Type Trade Overage for the QSE - The quantity of submitted applicable AS Type trades in excess of DAM self- arrangement quantities for the QSE q for the Operating Hour. Where 'XX' is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| RTXXTOAMT | $ | Real-Time AS Type Trade Overage Amount for the QSE - The total charge to QSE q in Real-Time AS Type trade overages for each 15-minute Settlement Interval. Where 'XX' is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| RTXXTOAMTTOT | $ | Real-Time AS Type Trade Overage Total Amount - The total charge to all QSEs for Real-Time AS Type trade overages for each 15-minute Settlement Interval. Where 'XX' is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| RTXXWAPR | $/MWh | Real-Time AS Type Weighted-Average Price—The weighted average of the Ancillary Service Offer prices corresponding with the AS type awards from the Ancillary Service Offer for Resource r at Resource Node p represented by QSE q, for the 15-minute Settlement Interval. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. For a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| RUC | Misc | Reliability Unit Commitment—The commitment flag, issued by a RUC process, indicating the Operating Hours in which the Resource was committed by the RUC process. Operating Hours that are committed by the RUC process will have an hourly value of one <1>; otherwise the hourly value will be zero <0>. Where: The original commitment may be manually changed to include or remove committed hours per VDI instruction. The original commitment may be systematically changed to account for conflicting commitments and RUC Buy-Back hours as follows: - Changed from a 1 to 2 when the Resource is both DAM and RUC-committed in the same hour. - Changed from a 1 to 3 when the Resource is both RUC-committed and RUC-decommitted in the same hour, where the RUC-Decommitment is issued from a later RUC process than the RUC-Commitment. - Changed from a 1 to 4 when the Resource is RUC-committed from multiple RUC Processes for the same hour. Where the RUC issued from the latest RUC process stays = 1. Any RUC issued for same hour from previous RUC processes are changed to = 4. - Changed from a 1 to 5 to indicate hours that have been successfully opted-out by the QSE (RUC Buy-Back hours). |
| RUCAC | Misc | Reliabiility Unit Commitment for Additional Capacity—The flag indicating the Operating Hours in which in which a Combined-Cycle Resource has been RUC-Committed for Additional Capacity. This flag not only identifies RUC for Additional Capacity hours but will reflect for the previously QSE-Committed Combined Cycle Generation Resource (Configuration) and the RUC Process in which the RUC for Additional Capacity instruction was issued from.  Where: The original record may be manually changed to include or remove hours per VDI instruction. The original record may be systematically changed to account for conflicting instructions as follows: - Changed from a 1 to 2 when a RUC-commitment no longer exists for the hour for the CC Train due to an adjustment to RUC-commitments (see variable RUC above). - Changed from a 1 to 4 when the CC Train is RUCAC from multiple RUC Processes for the same hour. Where the RUCAC issued from the earliest RUC process stays = 1. Any RUCAC issued for same hour from later RUC processes are changed to = 4. |
| RUCACREV | $ | Revenue from RUCAC Hours—For a RUC-committed Combined Cycle Train, the net positive sum for the energy revenues for generation up to LSL and the total revenue for operating above LSL less the cost during all RUCAC-Hours, for the Operating Day. |
| RUCASFADJ | MW | RUC Ancillary Service Shortfall at End of Adjustment Period —The QSE q’s Ancillary Service capacity shortfall at the end of the Adjustment Period for the 15-minute Settlement Interval i. |
| RUCASFSNAP | MW | RUC Ancillary Service Shortfall at Snapshot —The QSE q’s Ancillary Service capacity shortfall according to the RUC Snapshot for the RUC process ruc for the 15-minute Settlement Interval i. |
| RUCCAPADJ | MW | RUC Capacity Snapshot during Adjustment Period—The amount of the QSE’s calculated capacity in the RUC according to the COP and Trades Snapshot at the end of the Adjustment Period for a 15-minute Settlement Interval. |
| RUCCAPCREDIT | MW | RUC Capacity Credit by QSE—The capacity credit resulting from capacity paid through the RUC Capacity-Short Charge for the 15-minute Settlement Interval. |
| RUCCAPSNAP | MW | RUC Capacity Snapshot at time of RUC—The amount of the QSE’s calculated capacity in the COP and Trades Snapshot for a 15-minute Settlement Interval. |
| RUCCAPTOT | MW | RUC Capacity Total—The sum of the HSLs of all RUC-committed Resources for a particular RUC process, for the hour that includes the 15-minute Settlement Interval. |
| RUCCBAMT | $ | RUC Clawback Charge—The RUC Clawback Charge to a QSE for a Resource as described in Section 5.7.2, RUC Clawback Charge, for each RUC-Committed Hour of the Operating Day for that Resource. |
| RUCCBAMTQSETOT | $ | RUC Clawback Charge QSE Total - The aggregate total RUC Clawback charges for the QSE, for each hour of the Operating Day. |
| RUCCBAMTTOT | $ | RUC Clawback Amount Total—The sum of RUC Clawback Charges for all QSEs, including amounts for RMR Units, for the hour that includes the 15-minute Settlement Interval. |
| RUCCBFC | Misc | RUC Claw-Back Factor for QSE Clawback intervals— The Resource’s clawback factor for QSE Clawback Intervals, which is 0% if a Three-Part Supply Offer was submitted and 50% otherwise. |
| RUCCBFR | Misc | RUC Claw-Back Factor for RUC-Committed Hours—The Resource’s Claw-Back Factor for RUC-Committed Hours, which is 50% if a Three-Part Supply Offer was submitted and 100% otherwise. During EECP conditions the Resource’s clawback factor for RUC-Committed Hours is 0% if a Three-Part Supply Offer was submitted and 50% otherwise. |
| RUCCPADJ | MW | RUC Capacity Purchase at Adjustment Period—The QSE q’s capacity purchase, according to the Adjustment Period COP and Trades Snapshot for the hour that includes the 15-minute Settlement Interval. |
| RUCCPSNAP | MW | RUC Capacity Purchase at Snapshot—The QSE q’s capacity purchase, according to the COP and Trades Snapshot for the RUC process for the hour that includes the 15-minute Settlement Interval. |
| RUCCSADJ | MW | RUC Capacity Sale at Adjustment Period—The QSE q’s capacity sale, according to the Adjustment Period COP and Trades Snapshot for the hour that includes the 15-minute Settlement Interval. |
| RUCCSAMT | $ | RUC Capacity-Short Amount—The charge to a QSE, due to capacity shortfall for a particular RUC process, for the 15-minute Settlement Interval. |
| RUCCSAMTQSETOT | $ | RUC Capacity-Short Charge Amount QSE Total—The QSE total for RUC Capacity-Short Charges, across all RUC Processes, for the 15-minute settlement interval. |
| RUCCSAMTTOT | $ | RUC Capacity-Short Amount Total—The sum of RUC Capacity-Short Charges for all QSEs and RUC processes for the 15-minute Settlement Interval. |
| RUCCSSNAP | MW | RUC Capacity Sale at Snapshot—The QSE q’s capacity sale, according to the COP and Trades Snapshot for the RUC process for the hour that includes the 15-minute Settlement Interval. |
| RUCD | Misc | Reliability Unit Decommitment—The decommitment flag, issued by a RUC process, indicates the Operating Hours in which the Resource was decommitted by the RUC process. Operating Hours that are decommitted by the RUC process will have an hourly value of one <1>; otherwise the hourly value will be zero <0>. Where: The original decommitment may be manually changed to include or remove decommitted hours per VDI instruction. The original decommitment may be systematically changed to account for conflicting commitments as follows: - Changed from a 1 to 3 when the Resource is both RUC-committed and RUC-decommitted in the same hour. - Changed from a 1 to 4 when the Resource is RUC-decommitted from multiple RUC Processes for the same hour. Where the RUCD issued from the earliest RUC process stays = 1. Any RUCD issued for same hour from later RUC processes are changed to = 4. |
| RUCDCAMT | $ | RUC Decommitment Amount per QSE per Settlement Point per unit—The amount calculated for RMR Unit R at Resource Node SP represented by QSE Q due to ERCOT de-commitment, for the hour. |
| RUCDCAMTQSETOT | $ | RUC De-commitment Payment Amount QSE Total—The QSE total for RUC De-commitment payments for each hour of the Operating Day. |
| RUCDCAMTTOT | $ | RUC Decommitment Payment Total—The sum of RUC Decommitment Payments to all QSEs, for each hour of the Operating Day. |
| RUCDFLAG | Misc | RUC Decommitment Flag - The flag that indicates if a Resource is eligible for RUC Decommitment compensation, for each contiguous decommitted period of the Operating Day. If the Resource is eligible for compensation its value is one (1); otherwise, zero (0). |
| RUCDSTARTTYPE | Misc | RUC Decommitment Start Type - The flag that indicates the startup warmth state that a RUC decommitted Resource is eligible to be compensated for. Its value will be set to one <1> for a warmth state of hot; two <2> for a warmth state of intermediate; and three <3> for a warmth state of cold; otherwise, zero <0>. |
| RUCEXRQC | $ | Energy Revenue Less Cost During QSE-Clawback Intervals—The sum of the total energy revenue for the Resource’s generation less the cost of the generation during all QSE-Clawback Intervals for the Operating Day. |
| RUCEXRR | $ | Energy Revenue Less Cost Above LSL During RUC Committed Hours - The sum of the total Energy revenue for the Resources Generation above the LSL less the cost of the generation during all RUC-committed Hours, for the Operating Day. |
| RUCEXRR96 | $ | Energy Revenue Less Cost Above LSL During RUC Committed Hours by interval - The total revenue for the Resource operating above its LSL less the cost during all RUC-Committed hours for the 15-minute Settlement Interval, during all RUC-committed Hours. |
| RUCG | $ | RUC Guarantee—The sum of the Resource’s Startup Costs and Minimum-Energy Costs during all RUC-Committed Hours, for the Operating Day. |
| RUCGME | $ | RUC Minimum-Energy Guarantee by interval— The guaranteed minimum-energy costs for Resource for the 15-minute Settlement Interval. |
| RUCHR | Misc | RUC Hour—The total number of RUC-Committed Hours, for the Resource for the Operating Day. |
| RUCHSL | MW | High Sustainable Limit Generation per QSE per Settlement Point per Resource for each RUC process—The High Sustainable Limit of Generation Resource r represented by QSE Q at Resource Node SP for each RUC process for the hour that includes the 15-minute Settlement Interval. |
| RUCMEREV | $ | RUC Minimum-Energy Revenue—The sum of the energy revenues for the Resource’s generation up to LSL during all RUC-Committed Hours, for the Operating Day. |
| RUCMEREV96 | $ | RUC Minimum-Energy Revenue by interval—The energy revenue for the Resource’s generation up to LSL for the 15-minute Settlement Interval, during all RUC-Committed Hours. |
| RUCMWAMT | $ | RUC Make-Whole Amount per QSE per Settlement Point per unit—The amount calculated for RMR Unit R committed in RUC at Resource Node SP to make whole the startup and minimum energy cost of this unit, for the hour. See Section 5.7.1, RUC Make-Whole Payment. |
| RUCMWAMTQSETOT | $ | RUC Make-Whole Payment Amount QSE Total—The QSE total for RUC Make-Whole Payments, for each RUC-Committed Hour of the Operating Day. |
| RUCMWAMTRUCTOT | $ | RUC Make-Whole Amount Total per RUC Process—The sum of RUC Make-Whole Payments for a particular RUC process, including amounts for RMR Units, for the hour that includes the 15-minute Settlement Interval. |
| RUCMWAMTTOT | $ | RUC Make-Whole Amount Total—The sum of RUC Make-Whole Payments for all QSEs and RUC processes, including amounts for RMR Units, for the hour that includes the 15-minute Settlement Interval. |
| RUCOSFADJ | MW | RUC Overall Shortfall at End of Adjustment Period —The QSE q’s overall capacity shortfall at the end of the Adjustment Period, including capacity from IRRs as seen in the RUC Snapshot for the RUC process ruc, for the 15-minute Settlement Interval i. |
| RUCOSFSNAP | MW | RUC Overall Shortfall at Snapshot —The QSE q’s overall capacity shortfall according to the RUC Snapshot for the RUC process ruc for the 15-minute Settlement Interval i. |
| RUCSF | MW | RUC Shortfall—The QSE’s capacity shortfall for a particular RUC process for the 15-minute Settlement Interval. See formula in Section 5.7.4.1.1, Capacity Shortfall Ratio Share. |
| RUCSFADJ | MW | RUC Shortfall at Adjustment Period—The QSE q’s adjustment period capacity shortfall for the 15-minute Settlement Interval. |
| RUCSFRS | Misc | RUC Shortfall Ratio Share—The ratio of the QSE’s capacity shortfall to the sum of all QSEs’ capacity shortfalls for a particular RUC process, for the 15-minute Settlement Interval. See Section 5.7.4.1.1, Capacity Shortfall Ratio Share. |
| RUCSFSNAP | MW | RUC Shortfall at Snapshot—The QSE q’s capacity shortfall according to the snapshot for the RUC process for the 15-minute Settlement Interval. |
| RUCSFTOT | MW | RUC Shortfall Total—The sum of all QSEs’ capacity shortfalls, for a RUC process, for a 15-minute Settlement Interval. |
| RUCSUFLAG | Misc | RUC Startup Flag—The flag that indicates whether or not the start s is eligible for RUC Make-Whole Payment. Its value is one if eligible; otherwise, zero. See Section 5.6.2, RUC Startup Cost Eligibility and Section 5.6.3, Forced Outage of a RUC-Committed Resource, for more information on startup eligibility. |
| RUCTFLAG | Misc | RUC Transition Flag - The flag that indicates, for a Combined Cycle Train, whether or not the startup transition is eligible for guarantee through the calculation of RUCG. Its value is zero (0) if the transition is not eligible; one (1) if the transition is eligible between DAM and RUC commitments; two (2) if the transition is eligible between RUC commitments; and three (3) if the transition is eligible between RUC and QSE-Self commitments. |
| RUCXXQ | MW | RUC-committed for the AS Type per QSE – The total quantity of the applicable AS Type Service committed by the RUC Process for Resources represented by QSE q, for the hour. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| RUPOSADJ | MW | Regulation Up Position at End of Adjustment Period-The QSE q’s net positive Reg-Up Ancillary Service Position at the end of the Adjustment Period for the hour h that includes the 15-minute Settlement Interval. |
| RUPOSSNAP | MW | Regulation Up Position at Snapshot-The QSE q’s net positive Real-Time Reg-Up Ancillary Service Position according to the RUC Snapshot for the RUC process ruc for the hour h that includes the 15-minute Settlement Interval. |
| RXXFQ | MW | Reconfiguration AS Type Failure Quantity per QSE—QSE q total capacity associated with reconfiguration reductions on its Ancillary Service Supply Responsibility for the AS Type, for the hour. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| RXXFQAMT | $ | Reconfiguration AS Type Failure Quantity Amount per QSE—The charge to QSE q for its total capacity associated with reconfiguration reductions on its Ancillary Service Supply Responsibility for the AS Type, for the hour. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| SAXXQ | MW | Total Self-Arranged AS Type Quantity per QSE for all markets—The sum of all self-arranged AS Type quantities submitted by QSE q for DAM and all SASMs. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| SBPBHDLFLAG | Misc | Flag signifying that the IRR has received a Base Point below the HDL used by SCED in all sced intervals within the 15-minute Settlement Interval |
| SFP | $/MMBtu | Solid Fuel Price – Deemed fuel price for solid fuel fired units of $1.50/MMBtu. |
| SFPERME | Misc | Percent Solid Fuel – The percentage of fuel used by the resource to operate at minimum-energy that will be solid fuel. |
| SFPERSU | Misc | Percent Solid Fuel – The percentage of fuel used by the resource to startup that will be solid fuel, for each start type. |
| SPDAMT | $ | Set Point Deviation Charge per QSE per Settlement Point per Resource - The charge to QSE q for Resource r at Resource Node p, for its deviation from AASP, for the 15-minute Settlement Interval i. |
| SPDAMTQSETOT | $ | Set-Point Deviation Amount QSE Total per QSE - The total of Set-Point Deviation Charges to QSE q for all Resources represented by this QSE, for the 15-minute Settlement Interval. |
| SPDAMTTOT | $ | Set-Point Deviation Amount Total - The total of Set-Point Deviation Charges to all QSEs for all Resources, for the 15-minute Settlement Interval. |
| SPDEXEMPTFLAG | Misc | SPDEXEMPTFLAG – Flag that indicates the Resource should be exempt from set-point deviation charges for the 15-minute Settlement Interval. The flag will be set to one (1) for the Resource to be exempt, otherwise the value will be zero (0). |
| SSQ | MW | Self-Schedule Quantity per Self-Schedule—The QSE’s Self Schedule MW quantity for the Self-Schedule, for the 15-minute Settlement Interval. |
| SSSK | MW | Self-Schedule with Sink at Settlement Point per QSE per Settlement Point – The QSE’s Self-Schedule with sink at the Settlement Point, for the 15-Minute Settlement Interval |
| SSSR | MW | Self-Schedule with Source at Settlement Point per QSE per Settlement Point – The QSE’s Self-Schedule with source at the Settlement Point, for the 15-Minute Settlement Interval |
| STARTTYPE | None | Start Type Flag – The flag that indicates the type of start (hot intermediate or cold) that a Resource incurred for the Resource, represented by the QSE for each hour for the Operating Day. The possible values include: zero (0) for none, one (1) for hot, two (2) for intermediate and three (3) for cold. |
| STATUSADJ | Misc | Resource Operation Status at Adjustment Period - The Resource’s Operating Status as seen in the last COP and Trades Snapshot at the end of the Adjustment Period, for the hour that includes the 15-minute settlement interval. If the Resource has any ON status for the hour, its value is one <1>; otherwise, zero <0>. |
| STATUSONHOLD | Misc | Status On-Hold Flag – Indicates the Telemetered Resource Status of “ONHOLD” has been submitted to ERCOT. |
| STATUSONTEST | Misc | Status On-Test Flag –Indicates the Telemetered Resource Status of “ONTEST” has been submitted to ERCOT. |
| STATUSSHUTDOWN | Misc | Status Shut Down Flag- Indicates the Telemetered Resource Status of “SHUTDOWN” has been submitted to ERCOT. |
| STATUSSNAP | Misc | Resource Operation Status at Snapshot - The Resource’s Operating Status as seen in the COP and Trades Snapshot for the RUC process, for the hour that includes the 15-minute settlement interval. If the Resource has any ON status for the hour, its value is one <1>; otherwise, zero <0>. |
| STATUSSTARTUP | Misc | Status Start Up Flag- Indicates the Telemetered Resource Status of “STARTUP” has been submitted to ERCOT. |
| STOM | $/MWh | Standard Operations and Maintenance Cost - The standard O&M cost for the Resource Category rc for operations above LSL, shall be set to the minimum energy variable O&M costs, as described in paragraph (6)(c) of Section 5.6.1, Verifiable Costs. |
| SUCDA | $ | Securitization Uplift Charge Daily Amount - The total amount of Securitization Uplift Charges assessed for Operating Day. |
| SUO | $/Start | Startup Offer per QSE per Resource per Settlement Point—The Startup Offer included in the Three-Part Supply Offer associated with Resource r at Resource Node p represented by QSE q, representing an offer for all costs incurred by the Resource in starting up and reaching breaker close. |
| SUPR | $/Start | Startup Price per start—The settlement price for the start s. |
| SUSDFLAG | Misc | For a resource if either condition is met: 1. Anytime a Resource sends telemetry to ERCOT with a status of “STARTUP” during the 15-minute Settlement Interval. 2. Anytime a Resource’s AABP is less than the average telemetered LSL. |
| SWAC | $ | Switchable Generation Approved Costs – The total amount of the calculation of financial loss, as submitted by the QSE q for the Resource r, as approved by ERCOT for the Operating Day d. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| SWASIC | $ | Switchable Generator Ancillary Services Imbalance Cost —The Ancillary Service imbalance costs for Resource r represented by QSE q for instructed hours, for the Operating Day d. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. Ancillary Service imbalance costs represent Real-Time imbalance charges for the amount of Ancillary Services the SWGR was not able to provide as required by its Day-Ahead commitment from the non-ERCOT Control Area, starting from the time of shutdown in the other grid to two hours following the time ERCOT released the Resource. |
| SWCG | $ | Switchable Generation Cost Guarantee—The sum of eligible Startup Costs, minimum-energy costs, operating costs, and other Switchable Generation approved costs for Resource r represented by QSE q for all instructed hours, for the Operating Day d. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| SWEIC | $ | Switchable Generator Energy Imbalance Cost —The energy imbalance costs for Resource r represented by QSE q for instructed hours, for the Operating Day d. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. Energy imbalance costs represent Real-Time imbalance charges for the amount of energy the SWGR was not able to provide as required by its Day-Ahead Market commitment from the non-ERCOT Control Area, starting from the beginning of the ramp-down period in the other grid to two hours following the time ERCOT released the Resource. |
| SWFC | $ | Switchable Generator Fuel Cost —The incremental fuel costs and fees for Resource r represented by QSE q for all instructed hours, for the Operating Day d. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. Incremental fuel costs must be based on those costs incurred as described in Section 9.14.9. |
| SWFIPC | $ | Switchable Generator Fuel Imbalance Penalty Cost —The fuel imbalance penalty cost for Resource r represented by QSE q, for the Operating Day, arising from the SWGR not consuming its contracted fuel quantities as a result of a switch from a non-ERCOT Control Area as requested by ERCOT. Fuel imbalance penalty costs are limited to those costs assessed for the period starting at the initiation of the ramp-down in the non-ERCOT Control Area to two hours following the time ERCOT released the SWGR. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| SWIHR | none | Switchable Generation Instructed Hours—The total number of Switchable Generation instructed hours, for Resource r represented by QSE q, for the Operating Day d. When one or more Combined Cycle Generation Resources are committed by ERCOT, the total number of instructed hours is calculated for the Combined Cycle Train for all switchable instructed Combined Cycle Generation Resources. |
| SWMEC | $ | Switchable Generation Minimum Energy Cost —The minimum energy costs for Resource r represented by QSE q during instructed hours, for the Operating Day d. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| SWMWAMT | $ | Switchable Generation Make-Whole Payment—The Switchable Generation Make-Whole Payment to the QSE q, for Resource r, for the hour. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| SWMWAMTQSETOT | $ | Switchable Generation Make-Whole Payment per QSE—The total Switchable Generation Make-Whole Payment to the QSE q, for the hour. |
| SWMWAMTTOT | $ | Switchable Generation Make-Whole Payment Total—The total Switchable Generation Make-Whole Payments to all QSEs for the hour. |
| SWMWDC | $ | Switchable Generator Make-Whole Payment Distribution Cost —The Make-Whole Payment distribution costs for Resource r represented by QSE q for instructed hours, for the Operating Day d. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. Make Whole Payment distribution costs represent charges from non-ERCOT Control Area from the time of shutdown in the other grid to two hours following the time ERCOT released the Resource. |
| SWOC | $ | Switchable Generation Operating Cost —The operating costs for Resource r represented by QSE q during instructed hours, for the Operating Day d. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| SWPSLR | $ | Switchable Generation Physical Switch Lost Revenue – The loss of revenue, net of any saved costs including avoided fuel consumption, experienced by the QSE when the Combined Cycle Generation Resource operating in ERCOT must reduce its output to accommodate a switch from a non-ERCOT Control Area of one or more turbines needed to achieve a Combined Cycle Generation Resource configuration instructed by ERCOT. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| SWRTREV | $ | Switchable Generation Real-Time Revenues – The sum of energy revenues for the Resource r, represented by QSE q, during all instructed hours for the Operating Day d. Where for a Combined Cycle Train, Resource r is the Combined Cycle Train. |
| SWSF | none | Switchable Generation Startup Factor —The Switchable Generation Startup Factor for a Switchable Generation Resource. The SWSF shall be set to a value of 2 if the SWGR has a COP Resource Status of EMRSWGR within 24 hours of being released by the ERCOT Operator. Otherwise, the SWSF shall be set to a value of 1. |
| SWSUC | $ | Switchable Generation Start-Up Cost —The Startup Costs for Resource r represented by QSE q for startup hours, for the Operating Day d. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| SYS\_GEN\_DISCFACTOR | Misc | System Wide Discount Factor based on the approved Reserve Discount Factor for Generation Resources. |
| TELRRSRC | MW | Telemetered Responsive Reserve Responsibility for the Resource as Calculated—The calculated comparison of the time-weighted average telemetered RRS Ancillary Service Resource Responsibility as compared to available capacity for the Resource r, represented by the QSE q, for the hour. |
| TELXXR | MW | Telemetered AS Type Responsibility for the Resource - The time-weighted average telemetered Ancillary Service Resource Responsibility for the Resource r, represented by QSE q, for the hour. The time-weighted average value is rounded to 0.1 MW. Where ‘XX’ is a placeholder for the following AS types: RU or RD. |
| TELXXRC | MW | Telemetered AS Type Responsibility for the Resource as Calculated—The time-weighted average calculated telemetered Ancillary Service Resource Responsibility as compared to available capacity for the Resource, for the hour. Where ‘XX’ is a placeholder for the following AS types: NS or ECR. |
| TGFTH | MWh | Telemetered Generation for the Hour per Resource per Hour—The telemetered generation of Generation Resource r, for the hour. |
| TLMP | Second | Duration of SCED interval per interval - The duration of the portion of the SCED interval y within the 15-minute Settlement Interval. |
| TOFO | Time | Time of Forced Outage — The time in which a forced outage occurs, for a Resource. |
| TPVLSL\_FACTOR | Misc | Telemetered Power Versus Telemetered LSL Factor--Telemetered generation threshold that determines RTOLCAP consideration. |
| TPVLSLFLAG | Misc | Telemetered Power (TWTG) Versus Telemetered Low Sustained Limit (AVGTLSL) Flag- Denotes Settlement intervals in which telemetered net real power (TWTG) from a Resource is greater than or equal to 95% (TPVLSL\_FACTOR as of go-live date) of the Resource’s telemetered Low Sustained Limit (AVGTLSL). Creation of this output is necessary to comply with PR 6.7.4.3 (Real-Time Ancillary Service Imbalance Payment or Charge). |
| TWTG | MWh | Time-Weighted Telemetered Generation per QSE per Resource per Settlement Point—The telemetered generation of Generation Resource r represented by QSE q at Resource Node p, for the 15-minute Settlement Interval i. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train. |
| TXXFQ | MW | Telemetered AS Type Failure Quantity per QSE— Calculated failure quantity for QSE q by comparing its average telemetered AS Type sum to its Ancillary Service Supply Responsibility for the AS Type, for the hour. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| UCONSM | MWh | Under Consumption Volumes per QSE per Settlement Point per Controllable Load Resource—The amount under-consumed by the Controllable Load Resource r represented by QSE q at Settlement Point p for the 15-minute Settlement Interval i. |
| UGEN | MWh | Under Generation Volumes per QSE per Settlement Point per Resource—The amount over-generated by the Generation Resource R represented by QSE Q at Resource Node SP for the 15- minute Settlement Interval I. |
| UGENA | MWh | Adjusted Under Generation Volumes per QSE per Settlement Point per Resource—The amount under-generated by the Generation Resource r represented by QSE q at Resource Node p for the 15-minute Settlement Interval adjusted pursuant to PR 6.7.4 (6). |
| UPESR | MWh | Under-Performance Volumes per QSE per Settlement Point per Resource - The amount the ESR r under-performed, represented by QSE q at Resource Node p, for the 15-minute Settlement Interval i. |
| URLLAG | MVAR | Unit Reactive Limit Lagging per QSE per Resource—The Unit Reactive Limit for lagging Reactive Power of the Generation Resource R represented by QSE Q as determined in accordance with these Protocols. Its value is positive. |
| URLLEAD | MVAR | Unit Reactive Limit Leading per QSE per Resource—The Unit Reactive Limit for leading Reactive Power of the Generation Resource R represented by QSE Q as determined in accordance with these Protocols. Its value is negative. |
| VERIME | $/MWh | Verifiable Minimum-Energy Costs—The verifiable minimum-energy costs of a Resource for operating at LSL submitted by the QSE for the Resource, according to Section 5.6.1, Verifiable Costs and Section 5.6.1.2, Verifiable Minimum-energy Costs, for the Operating Day. |
| VERISU | $/Start | Verifiable Startup Costs—The verifiable startup costs of a Resource for a start submitted by the QSE for the Resource, according to Section 5.6.1, Verifiable Costs and Section 5.6.1.1, Verifiable Startup Costs, for the Start Type for the Operating Day. |
| VFCLSL | MMBtu/Hr | Verified Fuel Consumption at LSL – The energy required to sustain the Resource at LSL for the hour, submitted to ERCOT through the Verifiable Costs process. |
| VMEBLTP | $ | Presidio Exception Verified Monthly Energy Cost |
| VOMLSL | $/MWh | Variable Operation and Maintenance Expenses at LSL – The variable operational and maintenance expenses to operate at LSL for the Resource and submitted to ERCOT through the Verifiable Costs process. |
| VOMS | $/Start | Verifiable Operation and Maintenance Expenses per Start – The actual Operational and Maintenance expenses incurred for a start type for the Resource and submitted to ERCOT through the Verifiable Costs process. |
| VSSEAMT | $ | Voltage Support Service Energy Amount by interval—The lost opportunity payment to the QSE for ERCOT-directed VSS from the Generation Resource for the 15-minute Settlement Interval i. See Section 6.6.7.1, Voltage Support Service Payments. |
| VSSEAMTQSETOT | $ | Voltage Support Service Lost Opportunity Amount QSE Total per QSE—The total of the lost opportunity payments to QSE q for providing VSS for providing ERCOT-directed VSS for the 15-minute Settlement Interval. |
| VSSEAMTTOT | $ | Voltage Support Service Lost Opportunity Amount Total—The total of payments to all QSEs providing VSS in lieu of energy, for the 15-minute Settlement Interval. |
| VSSVARAMT | $ | Voltage Support Service var Amount by interval—The payment to the QSE for the VSS provided by Generation Resource for the 15-minute Settlement Interval i. See Section 6.6.7.1, Voltage Support Service Payments. |
| VSSVARAMTQSETOT | $ | Voltage Support var Amount QSE total per QSE - The total of the payments to QSE q as compensation for voltage support service by this QSE for the 15-minute settlement interval. |
| VSSVARAMTTOT | $ | Voltage Support Service var Amount Total—The total of payments to all QSEs providing VSS, for the 15-minute Settlement Interval. |
| VSSVARIOL | MVAR | Voltage Support Service VAR Instructed Output Level per QSE per Generation Resource—The instructed Reactive Power output level of Generation Resource R represented by QSE Q, lagging Reactive Power if positive and leading Reactive Power if negative, for the 15-minute Settlement Interval. |
| VSSVARLAG | MVARh | Voltage Support Service var Lagging per QSE per Generation Resource - The instructed portion of the Reactive Power above the Generation Resource’s lagging URL for Generation Resource R represented by QSE Q, for the 15-minute Settlement Interval. |
| VSSVARLEAD | MVARh | Voltage Support Service var Leading per QSE per Generation Resource - The instructed portion of the Reactive Power below the Generation Resource’s leading URL for Generation Resource R represented by QSE Q, for the 15-minute Settlement Interval. |
| VSSVARPR | $/MVARh | Voltage Support Service var Price - The price for instructed Mvar beyond a Generation Resource’s URL currently is $2.65/Mvarh (based on $50.00/installed kvar). |
| VTPSOFLAG | Misc | Valid Three-Part Supply Offer Flag—The flag that indicates, for each Operating Day, when valid Three-Part Supply Offer has been submitted for consideration in the DAM. The value will be one (1) if a Three-Part Supply Offer is submitted for consideration in the DAM and zero (0) otherwise. |
| WGRPP | MW | Wind-Powered Generation Resource Production Potential – The generation in MWh per hour from a WGR that could be generated from all available units of that Resource allocated from the 80% probability of exceedance of the Total ERCOT Wind Power Forecast (TEWPF) as seen at the time of the RUC process, for the hour that includes the 15-minute settlement interval. |
| WSLAMTTOT | $ | Wholesale Storage Load Settlement — The total payment or charge to QSE q, Resource r, at Settlement Point p, for WSL for each 15-minute Settlement Interval. |
| XXCOST | $ | AS Type Cost per QSE—QSE Q’s share of the net total costs for the AS Type, for the hour. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| XXCOSTTOT | $ | AS Type Cost Total—The net total costs for the AS Type for the hour. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| XXFQ | MW | AS Type Failure Quantity per QSE—QSE Q’s total capacity associated with failures on its Ancillary Service Supply Responsibility for the AS Type, for the hour. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| XXFQAMT | $ | AS Type Failure Quantity Amount per QSE—The charge to QSE Q for its total capacity associated with failures on its Ancillary Service Supply Responsibility for the AS Type, for the hour. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| XXFQAMTQSETOT | $ | AS Type Failure Quantity Amount per QSE—The total charge to QSE q for its total capacity associated with failures and reconfiguration reductions on its Ancillary Service Supply Responsibility for the AS Type, for the hour. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| XXFQAMTTOT | $ | AS Type Failure Quantity Amount Total—The total charges to all QSEs for their capacity associated with failures on their Ancillary Service Supply Responsibilities for the AS Type, for the hour. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| XXINFQ | MW | AS Type Infeasible Quantity per QSE – QSE q’s total capacity associated with infeasible Ancillary Service Supply Responsibilities for the AS Type, for the hour. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| XXINFQAMT | $ | AS Type Infeasible Quantity Amount per QSE – The charge to QSE q for its total capacity associated with infeasible deployment of Ancillary Service Supply Responsibilities for the AS Type, for the hour. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| XXINFQAMTTOT | $ | AS Type Infeasible Quantity Amount Total – The charge to all QSEs for their total capacity associated with infeasible deployment of Ancillary Service Supply Responsibilities for the AS Type, for the hour. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| XXO | MW | AS Type Obligation per QSE—The Ancillary Service Obligation of QSE *q*, for the hour. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| XXPR | $/MW/Hr | AS Type Price—The price for the AS calculated based on the net total costs for the AS Type, for the hour. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| XXQ | MW | AS Type Quantity per QSE—The portion of QSE Q’s net Ancillary Service Obligation that is not self-supplied with its Resources capacity in either DAM or any SASM, for the hour. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| XXQTOT | MW | AS Type Quantity Total—The sum of every QSE’s portion of its net Ancillary Service Obligation that is not self-supplied with its Resource capacity in either DAM or any SASM, for the hour. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| XXTP | MW | Trade Purchases for applicable AS Type for the QSE - The final approved trade purchases for QSE q for the applicable AS Type for the Operating Hour. Where 'XX' is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| XXTRPQ | MW | AS Type Trade Purchases per QSE - QSE q’s total time-weighted average capacity Trade Purchase for the AS type, for the hour. The time-weighted average value is rounded to 0.1 MW. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| XXTRSQ | MW | AS Type Trade Sale per QSE - QSE q’s total time-weighted average capacity Trade Sale for the AS type, for the hour. The time-weighted average value is rounded to 0.1 MW. Where ‘XX’ is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |
| XXTS | MW | Trade Sales for applicable AS Type for the QSE - The final approved trade sales for QSE q for the applicable AS Type for the Operating Hour. Where 'XX' is a placeholder for the following AS types: RU, RD, RR, NS, or ECR. |

# Revision History

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| **Date** | **Version** | **Description** | **Author** |
| 12/05/2025 | 7.8 | Updated for RTC Go-Live. | Keely Hilton |