**5.7.1.3 Revenue Less Cost Above LSL During RUC-Committed Hours**

(1) The total revenue for a Resource operating above its LSL less the cost based on the Resource’s Energy Offer Curve capped by the Energy Offer Curve Cap (as described in Sections 4.4.9.3, Energy Offer Curve, and 4.4.9.3.3, Energy Offer Curve Caps for Make-Whole Calculation Purposes) or proxy Energy Offer Curve described in Section 6.5.7.3, Security Constrained Economic Dispatch, as applicable, during all RUC-Committed Hours of the Operating Day is Revenue Less Cost Above LSL During RUC-Committed Hours.

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| ***[NPRR971: Replace paragraph (1) above with the following upon system implementation:]***  (1) The total revenue for a Resource operating above its LSL less the cost based on the Energy Offer Curve Cost Cap (as described in Section 4.4.9.3.3, Energy Offer Curve Cost Caps) during all RUC-Committed Hours of the Operating Day is Revenue Less Cost Above LSL During RUC-Committed Hours. |

(2) The LSL and RTAIEC used to calculate Revenue Less Cost Above LSL During RUC-Committed Hours for a Combined Cycle Train are the LSL and RTAIEC that correspond to the Combined Cycle Generation Resource, within the Combined Cycle Train, that is RUC-committed for the hour.

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| ***[NPRR971: Replace paragraph (2) above with the following upon system implementation:]***  (2) The LSL used to calculate Revenue Less Cost Above LSL During RUC-Committed Hours for a Combined Cycle Train is the LSL that corresponds to the Combined Cycle Generation Resource, within the Combined Cycle Train, that is RUC-committed for the hour. |

(3) For each RUC-committed Resource, Revenue Less Cost Above LSL During RUC-Committed Hours is calculated as follows:

RUCEXRR *q, r, d* = Max {0, [RUCEXRR96 *q, r, i*]}

Where,

RUCEXRR96*q, r, i* = RTSPP *p, i* \* Max (0, RTMG *q, r, i* – (LSL *q, r, i* \* (¼)))

+ RTASREV *q, r, i*

+ (-1) \* (VSSVARAMT *q, r, i* + VSSEAMT *q, r, i*)

+ (-1) \* EMREAMT *q, r, i*

– RTAIEC *q, r, i* \* Max (0, RTMG *q, r, i* – (LSL *q, r, i* \* (¼)))]}

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| ***[NPRR971: Replace the formula “RUCEXRR96******q, r, i” above with the following upon system implementation:]***  RUCEXRR96*q, r, i* = RTSPP *p, i* \* Max (0, RTMG *q, r, i* – (LSL *q, r, i* \* (¼)))  + RTASREV *q, r, i*  + (-1) \* (VSSVARAMT *q, r, i* + VSSEAMT *q, r, i*)  + (-1) \* EMREAMT *q, r, i*  – RTEOCOST *q, r, i* \* Max (0, RTMG *q, r, i* – (LSL *q, r, i* \* (¼))) |

Where,

RTASREV *q, r, i =* RTRUREV *q, r, i +* RTRDREV *q, r, i +* RTRRREV *q, r, i +* RTECRREV *q, r, i +* RTNSREV *q, r, i*

The above variables are defined as follows:

| **Variable** | **Unit** | **Definition** |
| --- | --- | --- |
| RUCEXRR *q, r, d* | $ | *Revenue Less Cost Above LSL During RUC-Committed Hours*—The sum of the total revenue for Resource *r* represented by QSE *q* operating above its LSL less the cost during all RUC-Committed Hours, for the Operating Day *d*. When one or more Combined Cycle Generation Resources are committed by RUC, revenue less cost above LSL is calculated for the Combined Cycle Train for all RUC-committed Combined Cycle Generation Resources. |
| RUCEXRR96 *q, r, i* | $ | *Revenue Less Cost Above LSL During RUC-Committed Hours by interval*—The total revenue for Resource *r* represented by QSE *q* operating above its LSL less the cost during all RUC-Committed hours, for the Settlement Interval *i*. When one or more Combined Cycle Generation Resources are committed by RUC, revenue less cost above LSL is calculated for the Combined Cycle Train for all RUC-committed Combined Cycle Generation Resources. |
| RTSPP *p, i* | $/MWh | *Real-Time Settlement Point Price*—The Real-Time Settlement Point Price at the Resource’s Resource Node Settlement Point *p* for the Settlement Interval *i*. |
| RTAIEC *q, r, i* | $/MWh | *Real-Time Average Incremental Energy Cost*⎯The average incremental energy cost for Resource *r* represented by QSE *q*, calculated using the Energy Offer Curve capped by the Energy Offer Curve Cap, for the Resource’s generation above the LSL for the Settlement Interval *i.*  SeeSection 4.6.5, Calculation of “Average Incremental Energy Cost” (AIEC). Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| |  |  |  |  | | --- | --- | --- | --- | | ***[NPRR971: Replace the variable “RTAIEC q, r, i” above with the following upon system implementation:]***   |  |  |  | | --- | --- | --- | | RTEOCOST *q, r, i* | $/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.*  SeeSection 4.4.9.3.3, Energy Offer Curve Cost Caps. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. | | | | |
| RTMG *q, r, i* | MWh | *Real-Time Metered Generation*—The metered generation of Resource *r* represented by QSE *q* for the Settlement Interval *i*. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| LSL *q, r, i* | MW | *Low Sustained Limit*—The LSL of Generation Resource *r* represented by QSE *q* for the hour that includes the Settlement Interval *i*, as submitted in the COP. Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| RTASREV *q, r, i* | $ | *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. |
| RTRUREV *q, r, i* | $ | *Real-Time Reg-Up Revenue* — The Real-Time Reg-Up revenue for QSE *q* calculated for Resource *r* for the 15-minute Settlement Interval *i*. See Section 6.7.5. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| RTRDREV *q, r, i* | $ | *Real-Time Reg-Down Revenue* — The Real-Time Reg-Down revenue for QSE *q* calculated for Resource *r* for the 15-minute Settlement Interval *i*. See Section 6.7.5. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| RTRRREV *q, r, i* | $ | *Real-Time Responsive Reserve Revenue* — The Real-Time RRS revenue for QSE *q* calculated for Resource *r* for the 15-minute Settlement Interval *i*. See Section 6.7.5. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| RTNSREV *q, r, i* | $ | *Real-Time Non-Spin Revenue* — The Real-Time Non-Spin revenue for QSE *q* calculated for Resource *r* for the 15-minute Settlement Interval *i*. See Section 6.7.5. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| RTECRREV *q, r, i* | $ | *Real-Time ERCOT Contingency Reserve Service Revenue* — The Real-Time ECRS revenue for QSE *q* calculated for Resource *r* for the 15-minute Settlement Interval *i*. See Section 6.7.5. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| VSSVARAMT *q, r, i* | $ | *Voltage Support Service VAr Amount*—The payment to the QSE *q* for the Voltage Support Service (VSS) provided by Generation Resource *r* for the 15-minute Settlement Interval *i*. See Section 6.6.7.1, Voltage Support Service Payments. Payment for VSS is made to the Combined Cycle Train. |
| VSSEAMT *q, r, i* | $ | *Voltage Support Service Energy Amount*—The lost opportunity payment to the QSE *q* for ERCOT-directed VSS from the Generation Resource *r* for the 15-minute Settlement Interval *i*. See Section 6.6.7.1. Payment for emergency energy is made to the Combined Cycle Train. |
| EMREAMT *q, r, i* | $ | *Emergency Energy Amount*—The payment to the QSE *q* as additional compensation for the additional energy or Ancillary Services produced or consumed by the Resource *r* in Real-Time during the Emergency Condition, for the 15-minute Settlement Interval *i*. See Section 6.6.9.1, Payment for Emergency Operations Settlement. Payment for emergency energy is made to the Combined Cycle Train. |
| *q* | none | A QSE. |
| *r* | none | A RUC-committed Generation Resource. |
| *d* | none | An Operating Day containing the RUC-commitment. |
| *p* | none | A Resource Node Settlement Point. |
| *i* | none | A 15-minute Settlement Interval within the hour that includes a RUC instruction. |

**5.7.1.4 Revenue Less Cost During QSE Clawback Intervals**

(1) The total revenue for a Resource less the cost based on the Resource’s Energy Offer Curve capped by the Energy Offer Curve Cap (as described in Sections 4.4.9.3, Energy Offer Curve, and 4.4.9.3.3, Energy Offer Curve Caps for Make-Whole Calculation Purposes) or proxy Energy Offer Curve described in Section 6.5.7.3, Security Constrained Economic Dispatch, as applicable, during all QSE Clawback Intervals of the Operating Day is Revenue Less Cost During QSE-Clawback Intervals.

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| ***[NPRR971: Replace paragraph (1) above with the following upon system implementation:]***  (1) The total revenue for a Resource less the cost based on the Energy Offer Curve Cost Cap as described in Section 4.4.9.3.3, Energy Offer Curve Cost Caps, during all QSE Clawback Intervals of the Operating Day is Revenue Less Cost During QSE-Clawback Intervals. |

(2) The MEPR, LSL, and RTAIEC used to calculate Revenue Less Cost During QSE Clawback Intervals for a Combined Cycle Train is the MEPR, LSL, and RTAIEC that corresponds to the Combined Cycle Generation Resource, within a Combined Cycle Train, that operates in Real-Time for the QSE Clawback Interval.

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| ***[NPRR971: Replace paragraph (2) above with the following upon system implementation:]***  (2) The MEPR and LSL used to calculate Revenue Less Cost During QSE Clawback Intervals for a Combined Cycle Train is the MEPR and LSL that corresponds to the Combined Cycle Generation Resource, within a Combined Cycle Train, that operates in Real-Time for the QSE Clawback Interval. |

(3) For each QSE Clawback Interval, Revenue Less Cost During QSE Clawback Intervals is calculated as follows:

**RUCEXRQC *q, r, d* = Max {0, [(RTSPP *p, i* \* RTMG *q, r, i*)**

**+ RTASREV*q, r, i***

**+ (-1) \* (VSSVARAMT *q, r, i* + VSSEAMT *q, r, i*)**

**+ (-1) \* EMREAMT *q, r, i***

**– [MEPR *q, r, i* \* Min (RTMG *q, r, i*, (LSL *q, r, i* \* (¼)))]**

**– [**RTAIEC ***q, r, i* \* Max (0, RTMG *q, r, i* – (LSL *q, r, i* \* (¼)))]]}**

|  |
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| ***[NPRR971: Replace the formula “RUCEXRQC q, r, d” above with the following upon system implementation:]***  RUCEXRQC *q, r, d* = Max {0, [(RTSPP *p, i* \* RTMG *q, r, i*)  **+ RTASREV*q, r, i***  + (-1) \* (VSSVARAMT *q, r, i* + VSSEAMT *q, r, i*)  + (-1) \* EMREAMT *q, r, i*  – [MEPR *q, r, i* \* Min (RTMG *q, r, i*, (LSL *q, r, i* \* (¼)))]  – [RTEOCOST *q, r, i* \* Max (0, RTMG *q, r, i* – (LSL *q, r, i* \* (¼)))]]} |

If the QSE submitted a validated Three-Part Supply Offer for the Resource,

Then, MEPR *q, r, i* = Min (MEO *q, r, i*, MECAP *q, r, i*)

Otherwise, MEPR *q, r, i* = MECAP *q, r, i*

If ERCOT has approved verifiable minimum-energy costs for the Resource,

Then, MECAP *q, r, i* = verifiable minimum-energy costs *q, r, i*

Otherwise, MECAP *q, r, i* = RCGMEC *i*

Where,

RTASREV *q, r, i =* RTRUREV *q, r, i +* RTRDREV *q, r, i +* RTRRREV *q, r, i +* RTECRREV *q, r, i +* RTNSREV *q, r, i*

The above variables are defined as follows:

| **Variable** | **Unit** | **Definition** |
| --- | --- | --- |
| RUCEXRQC *q, r, d* | $ | *Revenue Less Cost During QSE-Clawback Intervals*—The sum of the total revenue for Resource *r* less the cost during all QSE-Clawback Intervals for the Operating Day. When one or more Combined Cycle Generation Resources are committed by RUC, Revenue Less Cost During QSE-Clawback Intervals is calculated for the Combined Cycle Train for all Combined Cycle Generation Resources earning revenue in QSE-Clawback Intervals. |
| RTSPP *p, i* | $/MWh | *Real-Time Settlement Point Price*—The Real-Time Settlement Point Price at the Resource’s Settlement Point for the Settlement Interval *i*. |
| MEPR *q, r, i* | $/MWh | *Minimum-Energy Price*—The Settlement price for Resource *r* for minimum energy for the Settlement Interval *i*. Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| MEO *q, r, i* | $/MWh | *Minimum-Energy Offer*—Represents an offer for the costs incurred by Resource *r* in producing energy at the Resource’s LSL for the Settlement Interval *i*. Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| MECAP *q, r, i* | $/MWh | *Minimum-Energy Cap*—The amount used for Resource *r* for minimum-energy costs. The minimum cost is the Resource Category Minimum-Energy Generic Cap (RCGMEC) unless ERCOT has approved verifiable unit-specific minimum energy costs for that Resource, in which case the Minimum-Energy Cap is the verifiable unit-specific minimum energy cost. See Section 5.6.1, Verifiable Costs, for more information on verifiable costs. Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| RCGMEC *i* | $/MWh | *Resource Category Generic Minimum-Energy Cost*—The Resource Category Generic Minimum-Energy Cost cap for the category of the Resource, according to Section 4.4.9.2.3, Startup Offer and Minimum-Energy Offer Generic Caps, for the Operating Day. |
| RTAIEC *q, r, i* | $/MWh | *Real-Time Average Incremental Energy Cost* - The average incremental energy cost for Resource *r*, calculated using the Energy Offer Curve capped by the Energy Offer Curve Cap, for the Resource’s generation above the LSL for the Settlement Interval *i*. See Section 4.6.5, Calculation of “Average Incremental Energy Cost” (AIEC). Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| |  |  |  |  | | --- | --- | --- | --- | | ***[NPRR971: Replace the variable “RTAIEC q, r, i” above with the following upon system implementation:]***   |  |  |  | | --- | --- | --- | | RTEOCOST *q, r, i* | $/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.*  SeeSection 4.4.9.3.3, Energy Offer Curve Cost Caps. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. | | | | |
| RTMG *q, r, i* | MWh | *Real-Time Metered Generation*—The Resource *r*’s metered generation for the Settlement Interval *i*. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| LSL *q, r, i* | MW | *Low Sustained Limit*—The LSL of Generation Resource *r* represented by QSE *q* for the hour that includes the Settlement Interval *i*, as submitted in the COP. Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| RTASREV *q, r, i* | $ | *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. |
| RTRUREV *q, r, i* | $ | *Real-Time Reg-Up Revenue* — The Real-Time Reg-Up revenue for QSE *q* calculated for Resource *r* for the 15-minute Settlement Interval *i*. See Section 6.7.5, Real-Time Ancillary Service Imbalance Payment or Charge. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| RTRDREV *q, r, i* | $ | *Real-Time Reg-Down Revenue* — The Real-Time Reg-Down revenue for QSE *q* calculated for Resource *r* for the 15-minute Settlement Interval *i*. See Section 6.7.5. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| RTRRREV *q, r, i* | $ | *Real-Time Responsive Reserve Revenue* — The Real-Time RRS revenue for QSE *q* calculated for Resource *r* for the 15-minute Settlement Interval *i*. See Section 6.7.5. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| RTNSREV *q, r, i* | $ | *Real-Time Non-Spin Revenue* — The Real-Time Non-Spin revenue for QSE *q* calculated for Resource *r* for the 15-minute Settlement Interval *i*. See Section 6.7.5. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| RTECRREV *q, r, i* | $ | *Real-Time ERCOT Contingency Reserve Service Revenue* — The Real-Time ECRS revenue for QSE *q* calculated for Resource *r* for the 15-minute Settlement Interval *i*. See Section 6.7.5. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| VSSVARAMT *q, r, i* | $ | *Voltage Support Service VAr Amount*—The payment to the QSE for the VSS provided by Generation Resource *r* for the 15-minute Settlement Interval *i*. See Section 6.6.7.1, Voltage Support Service Payments. Payment for VSS is made to the Combined Cycle Train. |
| VSSEAMT *q, r, i* | $ | *Voltage Support Service Energy Amount*—The lost opportunity payment to the QSE for ERCOT-directed VSS from the Generation Resource *r* for the 15-minute Settlement Interval *i*. See Section 6.6.7.1. Payment for VSS is made to the Combined Cycle Train. |
| EMREAMT *q, r, i* | $ | *Emergency Energy Amount*—The payment to the QSE as additional compensation for the additional energy or Ancillary Services produced or consumed by the Resource *r* in Real-Time during the Emergency Condition, for the 15-minute Settlement Interval *i*. See Section 6.6.9.1, Payment for Emergency Operations Settlement. Payment for emergency energy is made to the Combined Cycle Train. |
| *q* | none | A QSE. |
| *r* | none | A RUC-committed Generation Resource. |
| *d* | none | An Operating Day containing the RUC-commitment. |
| *p* | none | A Resource Node Settlement Point. |
| *i* | none | A 15-minute Settlement Interval within the hour that is identified as a QSE-Clawback Interval. |

**6.6.6.3 RMR Adjustment Charge**

(1) Each QSE that represents an RMR Unit shall pay a charge designed to recover the net total revenues from RUC settlements, and from Real-Time settlements received by that QSE for all RMR Units that it represents, except that the charge does not include net revenues received by the QSE for the RMR Standby Payments calculated under Section 6.6.6.1, RMR Standby Payment, and the RMR energy payments calculated under Section 6.6.6.2, RMR Payment for Energy.

(2) The charge for each QSE representing an RMR Unit for a given Operating Hour is calculated as follows:

**RMRAAMT *q* = (-1) \* [((-1) \* RESREV *q, r, gsc, p* + EMREAMT *q, r, p, i* + RUCMWAMT *q, r, p* + RUCCBAMT *q, r, p* + RUCDCAMT *q, r, p* + VSSEAMT *q, r, p, i* + VSSVARAMT *q, r, i*)]**

The above variables are defined as follows:

| **Variable** | **Unit** | **Definition** |
| --- | --- | --- |
| RMRAAMT *q* | $ | *RMR Adjustment Charge per QSE*—The adjustment from QSE *q* Standby Payments and energy payments for all RMR Units represented by this QSE, for the revenues received for the same RMR Units from RUC and Real-Time operations, for the hour. |
| EMREAMT *q, r, p, i* | $ | *Emergency Energy Amount per QSE per Settlement Point per unit per interval*—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, for the 15-minute Settlement Interval *i*. Payment for emergency energy is made to the Combined Cycle Train. |
| RESREV *q, r, gsc, p* | $ | *Resource Share Revenue Settlement Payment*—The RMR Resource share of the total payment to the entire Facility with a net metering arrangement attributed to Resource *r* that is part of a generation site code *gsc* for the QSE *q* at Settlement Point *p*. |
| RUCMWAMT *q, r, p* | $ | *RUC Make-Whole Amount per QSE per Settlement Point per unit*—The amount calculated for RMR Unit *r* committed in RUC at Resource Node *p* to make whole the Startup Cost and minimum-energy cost of this unit, for the hour. See Section 5.7.1, RUC Make-Whole Payment. When one or more Combined Cycle Generation Resources are committed by RUC, payment is made to the Combined Cycle Train for all RUC-committed Combined Cycle Generation Resources. |
| RUCCBAMT *q, r* | $ | *RUC Clawback Charge per QSE per unit*—The RUC Clawback Charge to QSE *q* for RMR Unit *r*, for the hour. See Section 5.7.2, RUC Clawback Charge. When one or more Combined Cycle Generation Resources are committed by RUC, a charge is made to the Combined Cycle Train for all RUC-committed Combined Cycle Generation Resources. |
| RUCDCAMT *q, r, p* | $ | *RUC Decommitment Amount per QSE per Settlement Point per unit*—The amount calculated for RMR Unit *r* at Resource Node *p* represented by QSE *q* due to ERCOT de-commitment, for the hour. When one or more Combined Cycle Generation Resources are decommitted by RUC, payment is made to the Combined Cycle Train for all RUC-decommitted Combined Cycle Generation Resources. |
| VSSEAMT *q, r, p, i* | $ | *Voltage Support Service Energy Amount per QSE per Settlement Point per unit per interval* —The compensation to QSE *q* for ERCOT-directed power reduction from RMR Unit *r* at Resource Node *p* to provide Voltage Support Service (VSS), for the 15-minute Settlement Interval *i*. Payment for VSS is made to the Combined Cycle Train. |
| VSSVARAMT *q, r, i* | $ | *Voltage Support Service VAr Amount per QSE per Unit*—The payment to QSE *q* for the VSS provided by RMR Unit *r*, for the 15-minute Settlement Interval *i*. Payment for VSS is made to the Combined Cycle Train. |
| *q* | none | A QSE. |
| *gsc* | none | A generation site code. |
| *p* | none | A Resource Node Settlement Point. |
| *r* | none | An RMR Unit. |
| *i* | none | A 15-minute Settlement Interval in the hour. |

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| ***[NPRR885: Insert Section 6.6.6.10 below upon system implementation:]***  **6.6.6.10 MRA Variable Payment for Deployment**  (1) The variable payment to each QSE representing a Generation Resource MRA:  Outside of the MRA Contracted Hours, a Generation Resource MRA shall be treated in Settlements in the same manner as any Generation Resource registered with ERCOT  For MRA Contracted Hours with a deployment instruction:  MRAVAMT *q, r, h* = (-1) \* (MRAGRCVP *q, r, h* – MRARTREV *q, r, h*)  For MRA Contracted Hours without a deployment instruction:  MRAVAMT *q, r, h* = (-1) \* (Min (MRAGRCVP *q, r, h*, MRARTREV *q, r, h*) – MRARTREV *q, r, h*)  Where,  MRAGRCVP *q, r, h* = Max [VPRICE *q*, *r*, (FIP + MRACEFA *q, r*) \*  MRAPHR *q, r*] \* Min(RTMG *q, r, p, i*, MRACCAP*q, r, m* / 4)  MRARTREV *q,*r,h = Max [0, (RESREV*q, r, gsc, p, i*+ (-1) \* (EMREAMT *q, r, p, i* +  VSSVARAMT *q, r, i*+ VSSEAMT *q, r, i*))]  (2) The variable payment to each QSE representing an Other Generation MRA:  For MRA Contracted Hours with a deployment instruction:  MRAVAMT *q, r, h* = (-1) \* (MRACVP *q, r, h* – MRACRTREV *q, r, h*)  For MRA Contracted Hours without a deployment instruction:  MRAVAMT *q, r,h* = (-1) \* (Min(MRACVP *q, r, h*, MRACRTREV *q, r, h*) –MRACRTREV *q, r, h*)  Where,  MRACVP *q, r, h*= Max[VPRICE *q, r*, (FIP + MRACEFA *q, r*) \* MRAPHR *q, r* ] \*  RTVQ *q, r, i*  MRACRTREV *q, r, h*= (Max(0, Min(RTVQ *q, r, i* , MRACCAP*q, r, m* / 4) \* RTSPP *p, i*))  Where,  RTVQ *q, r, i* = MRAIPF *q, r,i* \* MRACCAP*q, r, m* / 4  (3) The variable payment to each QSE representing a Demand Response MRA:  For MRA Contracted Hours with a deployment instruction:  MRAVAMT*q, r*, *h* = (-1) \* Max[VPRICE *q, r*, (FIP + MRACEFA *q, r*) \* MRAPHR *q, r* ] \* RTVQ *q, r, i*  Where,  RTVQ *q, r, i* = MRAIPF *q, r,i* \* MRACCAP*q, r, m* / 4  The above variables are defined as follows:   | **Variable** | **Unit** | **Definition** | | --- | --- | --- | | MRAVAMT *q, r, h* | $ | *Must-Run Alternative Variable Amount per QSE per Resource by hour*—The variable payment to QSE *q* for MRA *r*, for the hour. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. | | MRAGRCVP *q, r, h* | $ | *Must-Run Alternative Generation Resource Calculated Variable Payment per QSE per Resource -* The variable payment to QSE *q* for Generation Resource MRA *r*, for the hour. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. | | FIP | $/MMBtu | *Fuel Index Price*—The FIP for the Operating Day. | | MRARTREV*q, r*, *h* | $ | *Must-Run Alternative Real-Time Revenues per QSE per Resource by hour*—The revenues received in Real-Time for QSE *q* for MRA *r*, for the hour. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. | | MRACCAP*q, r, m* | MW | *Must-Run Alternative Contract Capacity per QSE per Resource*—The capacity of MRA *r* represented by QSE *q* as specified in the MRA Agreement, for the month. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. | | MRAIPF *q, r, i* | none | *Must-Run Alternative Interval Performance Factor per QSE per Resource for the interval*— The interval performance factor of the MRA *r* represented by QSE *q*, for the 15-minute Settlement Interval *i*. | | MRACVP *q, r,h* | $ | *Must-Run Alternative Calculated Variable Payment per QSE per Resource -* The variable payment to QSE *q* for an Other Generation MRA or Demand Response MRA *r*, for the hour. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. | | VSSVARAMT *q, r, i* | $ | *Voltage Support Service VAr Amount per QSE per Generation Resource -* The payment to QSE *q* for the VSS provided by Generation Resource MRA *r*, for the 15-minute Settlement Interval *i*. Where for a combined cycle resource, *r* is a Combined Cycle Train. | | VSSEAMT *q, r, i* | $ | *Voltage Support Service Energy Amount per QSE per Generation Resource*—The lost opportunity payment to QSE *q* for ERCOT-directed VSS from Generation Resource MRA *r* for the 15-minute Settlement Interval. Where for a combined cycle resource, *r* is a Combined Cycle Train. | | RESREV *q, r, gsc, p, i* | $ | *Resource Share Revenue Settlement Payment*—The Resource share of the total payment to the entire Facility with a net metering arrangement attributed to Generation Resource MRA *r* that is part of a generation site code *gsc* for the QSE *q* at Settlement Point *p*, for the 15-minute Settlement Interval *i*. | | EMREAMT *q, r, p, i* | $ | *Emergency Energy Amount per QSE per Settlement Point per unit per interval—*The payment to QSE *q* as additional compensation or the additional energy or Ancillary Services produced or consumed by Resource MRA *r* at Resource Node *p* in Real-Time during the Emergency Condition, for the 15-minute Settlement Interval *i*. Payment for emergency energy is made to the Combined Cycle Train. | | VPRICE *q, r* | $/MWh | *Must-Run Alternative Variable Price per QSE per Resource*—The variable price for QSE *q* for MRA *r*, as specified in the MRA Agreement. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. | | MRAPHR *q, r* | MMBtu /MWh | *Must-Run Alternative Proxy Heat Rate per QSE per Resource – A proxy heat rate value for* MRA *r* represented by QSE *q, as* specified in the MRA Agreement. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. | | MRACRTREV *q, r, h* | $ | *Must-Run Alternative Calculated Real-Time Revenues per QSE per Resource* —The calculated variable revenue to QSE *q* for MRA *r*, for the hour. | | RTVQ *q, r, i,* | MWh | *Real-Time Variable Quantity per QSE per Resource by Settlement Interval* — The Real-Time variable quantity for MRA *r* represented by QSE *q*, for the 15-minute Settlement Interval *i*. | | RTMG *q, r, p, i* | MWh | *Real-Time Metered Generation per QSE per Settlement Point per Generation Resource*—The metered generation of Resource *r* at Resource Node *p* represented by QSE *q* in Real-Time for the 15-minute Settlement Interval *i*. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. | | MRACEFA*q, r* | $/MMBtu | *Must-Run Alternative Contractual Estimated Fuel Adder*—The Estimated Fuel Adder that is contractually agreed upon in Section 22, Attachment N, Standard Form Must-Run Alternative Agreement. Where for a Combined Cycle Train, the Generation Resource *r* is the Combined Cycle Train. | | RTSPP *p, i* | $/MWh | *Real-Time Settlement Point Price*⎯The Real-Time Settlement Point Price at the Settlement Point *p* for the 15-minute Settlement Interval *i*. | | *q* | none | A QSE. | | *r* | none | An MRA. | | *m* | none | An MRA Contracted Month. | | *h* | none | An MRA Contracted Hour for the MRA Contracted Month. | | *i* | none | A 15-minute Settlement Interval during the MRA Contracted Hours. | | *gsc* | none | A generation site code. | | *p* | none | A Resource Node Settlement Point. |   (2) The total of the variable payments for all MRAs represented by the QSE for a given hour is calculated as follows:  MRAVAMTQSETOT *q* =  MRAVAMT *q, r, h*  The above variables are defined as follows:   | **Variable** | **Unit** | **Definition** | | --- | --- | --- | | MRAVAMTQSETOT *q* | $ | *Must-Run Alternative Variable Amount Total per QSE by hour*—The total variable payment for all MRAs *r,* represented by the QSE *q*, for the hour. | | MRAVAMT *q, r, h* | $ | *Must-Run Alternative Variable Amount per QSE per Resource by hour*—The variable payment to QSE *q* representing MRA *r* for the hour *h*. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. | | *q* | none | A QSE. | | *r* | none | An MRA. | | *h* | none | An MRA Contracted Hour for the MRA Contracted Month. |   (3) The total of the variable payments for a given MRA Contracted Hour is calculated as follows:  MRAVAMTTOT =  MRAVAMTQSETOT *q*  The above variables are defined as follows:   | **Variable** | **Unit** | **Definition** | | --- | --- | --- | | MRAVAMTTOT | $ | *Must-Run Alternative Variable Amount Total by hour*—The total variable payments for the MRA Contracted Hour. | | MRAVAMTQSETOT *q* | $ | *Must-Run Alternative Variable Amount Total per QSE by hour*—The total variable payment for all MRAs*,* represented by the QSE *q*, for the MRA Contracted Hour. | | *q* | none | A QSE. | |

***6.6.9 Emergency Operations Settlement***

(1) Due to Emergency Conditions or Watches, additional compensation for each Generation Resource or Energy Storage Resource (ESR) for which ERCOT provides an Emergency Base Point may be awarded to the QSE representing the Generation Resource or ESR. If the Resource was instructed to increase generation or withdrawal at a Settlement Point price that is lower or higher than the price based on their Energy Offer Curve or Energy Bid/Offer Curve, respectively, ERCOT shall pay the QSE additional compensation for the change from the SCED Base Point immediately before the Emergency Condition or Watch, per paragraph (1) in Section 6.6.9.1, Payment for Emergency Operations Settlement. The Energy Offer Curve and Energy/Bid Offer Curve shall be capped by the Mitigated Offer Cap (MOC).

(2) In accordance with paragraph (8) of Section 8.1.1.2, General Capacity Testing Requirements, QSEs that receive a VDI to operate the designated Generation Resource for an unannounced Generation Resource test may be considered for additional compensation utilizing the formula as stated in paragraph (1) in Section 6.6.9.1. If the test period SCED Base Point is higher than the SCED Base Point immediately before the test period and the Settlement Point Price at the Resource Node is lower than the Generation Resource’s Energy Offer Curve price, or MOC if no offer exists, at the test Base Point, and the test was not a retest requested by the QSE, ERCOT shall pay the QSE additional compensation for the additional energy above the pre-test SCED Base Point. For the purpose of this Settlement, and limited to Settlement Intervals inclusive of the unannounced Generation Resource test, SCED Base Points will be used in place of the Emergency Base Point.

(3) A QSE that represents a QSGR that comes On-Line as a result of a Base Point greater than zero shall be considered for additional compensation using the formula in paragraph (2) in Section 6.6.9.1 when the Base Point is less than or equal to its applicable Seasonal net minimum sustainable rating provided in the Resource Registration data. For the 15-minute Settlement Interval, the process for additional compensation compares the Resource’s energy and Ancillary Services revenue with the Resource’s revenue target, as defined in Section 6.6.9.1, considering both Ancillary Service awards and Base Points, where the Energy Offer Curve is capped per the MOC. For the purpose of this Settlement, inclusive of the first Settlement Interval in which the QSGR is deployed by SCED from a current SCED Base Point equal to zero MW to a Base Point greater than zero, SCED Base Points will be used in place of the Emergency Base Point. The compensation specified in this paragraph continues over all applicable Intervals until SCED no longer needs the QSGR to generate energy pursuant to Section 3.8.3.1, Quick Start Generation Resource Decommitment Decision Process, and there is no manual Low Dispatch Limit (LDL) override in place on the QSGR.

(4) QSEs that received Base Points that are inconsistent with Real-Time Settlement Point Prices and QSEs that receive a manual override from the ERCOT Operator shall be considered for additional compensation using the formula in paragraph (2) in Section 6.6.9.1. For the 15-minute Settlement Interval, the process for additional compensation compares the Resource’s energy and Ancillary Services revenue with the Resource’s revenue target, as defined in Section 6.6.9.1, considering both the Ancillary Service awards and held Base Points, where the Energy Offer Curve or the Energy Bid/Offer Curve is capped per the MOC. The held Base Point is the Base Point that the QSE received due to a manual override by ERCOT Operator or the Base Point received by the QSE that ERCOT identified as inconsistent with Real-Time Settlement Point Prices. For the purpose of this Settlement, and limited to the held Settlement Intervals inclusive of the manual override or Base Points identified as inconsistent with prices, SCED Base Points will be used in place of the Emergency Base Point.

(5) In accordance with Section 6.3, Adjustment Period and Real-Time Operations Timeline, if ERCOT sets any SCED interval as failed, then QSEs shall be considered for additional compensation using the formula in paragraph (1) in Section 6.6.9.1. For the purpose of this Settlement, and limited to the failed SCED interval, SCED Base Points will be used in place of the Emergency Base Point.

(6) For each 15-minute Settlement Interval, a QSGR that receives a manual override from the ERCOT Operator shall only be considered for compensation under paragraph (4) above.

(7) For a QSGR, the MOC curve used to cap the Energy Offer Curve shall not include the variable Operations and Maintenance (O&M) adjustment cost to start the Resource from first fire to LSL, including the startup fuel described in paragraph (1)(d) of Section 4.4.9.4.1 for all emergency operations Settlement calculations with the exception of paragraph (3) above.

(8) QSEs that receive a VDI to operate its Resources for an unannounced CFC test, as described in the ERCOT Operating Guides, or have been instructed to operate in CFC mode, may be considered for additional compensation utilizing the formula in paragraph (1) in Section 6.6.9.1. If the Resource Settlement Point Price at the Resource Node is lower or higher than the price based on the Energy Offer Curve or Energy Bid/Offer Curve, respectively, at the Emergency Base Point during the CFC period, ERCOT shall pay the QSE additional compensation for the amount of energy from a zero Base Point to the Emergency Base Point for each Resource that provided CFC. Compensation for a CFC test will not be provided if the test was a retest requested by the QSE. For the purpose of this Settlement, and limited to Settlement Intervals inclusive of the CFC period, the Emergency Base Point shall be set to the Average Telemetered Generation for the 5 Minutes (AVGTG5M) and the Energy Offer Curve and Energy/Bid Offer Curve shall be capped by the MOC. Only Resources that moved in the direction to correct frequency are eligible to receive compensation for providing CFC.

(9) If Emergency Base Points or SCED Base Points are unavailable, corrupted or otherwise unusable for Settlement purposes due to system conditions, hardware failure, or software failure, the Real-Time Metered Generation (RTMG) and Real-Time Charging Load (RTCL) will be used to create proxy Base Points pursuant to Section 6.6.9.1. If the RTMG and RTCL are not available, the most accurate available generation and withdrawal data as determined by ERCOT will be used to create proxy Base Points pursuant to Section 6.6.9.1. ERCOT shall issue a Market Notice stating the Operating Day and Settlement Intervals that were impacted and the generation data that was used to create proxy Base Points.

(10) For ESRs that qualify for emergency Settlement:

(a) The Energy Bid/Offer Curve used to calculate the Emergency Base Point Price (EBPPR) will be the Energy Bid/Offer Curve that was submitted by the QSE and effective for the SCED interval immediately prior to the emergency intervals, with the exception of Resources that qualify under the paragraph (4) condition qualifying the QSE when the QSE has received Base Points that are inconsistent with Real-Time Settlement Point Prices, and will remain in effect for the duration of the emergency period; and

(b) For purposes of this section, the MOC curve used to cap the Energy Bid/Offer Curve shall be set to the highest Real-Time Settlement Point Price (RTSPP) at the Resource’s Settlement Point for the Operating Day.

**6.6.9.1 Payment for Emergency Operations Settlement**

(1) ERCOT shall pay the QSE an additional compensation for the Resource at its Resource Node Settlement Point during the Settlement Intervals that qualify for emergency Settlement as described in Section 6.6.9, Emergency Operations Settlement. The payment for a given 15-minute Settlement Interval 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***

Where:

If any EBP > 0 then:

EMREPRGEN *q, r, p* = Max (0, EBPWAPRGEN *q, r, p* – RTSPP *p*)

EBPWAPRGEN *q, r, p* = (EBPPR *q, r, p, y* \* Max (0.001, EBP *q, r, p, y*) \* TLMP *y*) **/**

(Max (0.001, EBP *q, r, p, y*)\* TLMP *y*)

EMREGEN *q, r, p* = Max (0, Min (AEBPGEN*q, r, p*, RTMG *q, r, p*) – ¼ \* Max(0, BP *q, r, p*))

AEBPGEN*q, r, p* =  (Max (0, EBP *q, r, p, y*) \* TLMP*y* / 3600)

If any EBP < 0 then:

EMREPRLOAD *q, r, p* = Max (0, RTSPP *p* – EBPWAPRLOAD *q, r, p* )

EBPWAPRLOAD *q, r, p* = (EBPPR *q, r, p, y* \* Min (-0.001, EBP *q, r, p, y*) \* TLMP *y*) **/**

(Min (-0.001, EBP *q, r, p, y*)\* TLMP *y*)

EMRELOAD *q, r, p* = Min (0, Max (AEBPLOAD*q, r, p*, RTCL *q, r, p*) – ¼ \* Min (0, BP *q, r, p*))

AEBPLOAD *q, r, p* =  (Min (0, EBP *q, r, p, y*) \* TLMP*y* / 3600)

The above variables are defined as follows:

| **Variable** | **Unit** | **Definition** |
| --- | --- | --- |
| EMREAMT *q, r, p* | $ | *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. |
| EMREPRGEN *q, r, p* | $/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 *q, r, p* | $/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. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| EMREGEN *q, r, p* | 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 *q, r, p* | 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. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| EBPWAPRGEN *q, r, p* | $/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 *q, r, p* | $/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. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| BP *q, r, p* | MW | *Base Point per QSE per Settlement Point per Resource*—The Base Point of Resource *r* at Resource Node *p* represented by QSE *q* from the SCED prior to the Emergency Condition or Watch. For a Combined Cycle Train, the Resource *r* must be one of the registered Combined Cycle Generation Resources within the Combined Cycle Train. |
| AEBPGEN*q, r, p* | 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*q, r, p* | 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. |
| EBP *q, r, p, y* | 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. |
| EBPPR *q, r, p, y* | $/MWh | *Emergency Base Point Price per QSE per Settlement Point per Resource by interval*—The average incremental energy cost calculated per the Energy Offer Curve or Energy Bid/Offer Curve corresponding to the Emergency Base Point for Resource *r* at Resource Node *p* represented by QSE *q* for the Emergency Base Point interval or SCED interval *y*. The Energy Offer Curve shall be capped by the MOC pursuant to Section 4.4.9.4.1, Mitigated Offer Cap and the Energy Bid/Offer Curve shall be capped by the maximum RTSPP at the Settlement Point for the Operating Day, per paragraph (10) (b) of Section 6.6.9. Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| RTSPP *p* | $/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. |
| RTMG *q, r, p* | MWh | *Real-Time Metered Generation per QSE per Settlement Point per Resource*—The metered generation of 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. |
| RTCL *q, r, p* | MWh | *Real-Time Charging Load per QSE per Resource per Settlement Point* —The charging load for Resource *r* at Resource Node *p* represented by the QSE *q,* represented as a negative value,for the 15-minute Settlement Interval. |
| TLMP *y* | second | *Duration of Emergency Base Point interval or SCED interval per interval*—The duration of the portion of the Emergency Base Point interval or SCED interval *y* within the 15-minute Settlement Interval. |
| *q* | none | A QSE. |
| *p* | none | A Resource Node Settlement Point. |
| *r* | none | A Generation Resource or ESR. |
| *y* | none | An Emergency Base Point interval or SCED interval that overlaps the 15-minute Settlement Interval. |
| 3600 | none | The number of seconds in one hour. |

(2) ERCOT shall pay the QSE an additional compensation for the Resource at its Resource Node Settlement Point during the Settlement Intervals that qualify for emergency Settlement as described in Section 6.6.9, Emergency Operations Settlement. The payment for a given 15-minute Settlement Interval is calculated as follows:

**EMREAMT *q, r, p*  = Min (0, RTENET *q, r, p* + RTASNET *q, r, p*)**

(a) Where the Real-Time Energy Net Revenue is calculated as follows:

RTENET *q, r, p* = RTEREV*q, r, p*  - RTEREVT*q, r, p*

Where:

RTEREV*q, r, p* = RTSPP *q, r, 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:

EBPWAPRGEN *q, r, p* = (EBPPR *q, r, p, y* \* Max (0.001, EBP *q, r, p, y* )\* TLMP *y*) **/**

(Max (0.001, EBP *q, r, p, y*)\* TLMP *y*)

EMREGEN *q, r, p* = Max(0, Min (AEBPGEN*q, r, p*, RTMG *q, r, p*))

AEBPGEN*q, r, p* =  (Max (0, EBP *q, r, p, y*) \* TLMP*y* / 3600)

If any EBP < 0 then:

EBPWAPRLOAD *q, r, p* = (EBPPR *q, r, p, y* \* Min (-0.001, EBP *q, r, p, y*) \* TLMP *y*) **/**

(Min (-0.001, EBP*q, r, p, y*)\* TLMP *y*)

EMRELOAD *q, r, p* = Min (0, Max (AEBPLOAD*q, r, p*, RTCL *q, r, p*))

AEBPLOAD *q, r, p* =  (Min (0, EBP *q, r, p, y*) \* TLMP*y* / 3600)

(b) Where the Real-Time Ancillary Services Net Revenue is calculated as follows:

RTASNET*q, r* = RTRUNET *q, r*+ RTRDNET *q, r*+ RTNSNET *q, r* + RTRRNET *q, r* + RTECRNET *q, r*

Where for Reg-Up:

RTRUNET *q, r*  = RTRUREV *q, r* - (¼)\* RTRUREVT *q, r, p*

RTRUREVT*q, r, p* = RTRUWAPR *q, r, p* \* RTRUAWD *q, r*

RTRUWAPR *q, r, p* = (RTRUOPR *q, r, p, y* \* Max (0.001, RTRUAWDS *q, r, p, y*) \* TLMP *y*) **/**

(Max (0.001, RTRUAWDS *q, r, p, y*)\* TLMP *y*)

Where for Reg-Down:

RTRDNET *q, r* = RTRDREV *q, r*  - (¼)\* RTRDREVT *q, r, p*

RTRDREVT*q, r, p* = RTRDWAPR *q, r, p* \* RTRDAWD *q, r*

RTRDWAPR *q, r, p* = (RTRDOPR *q, r, p, y* \* Max (0.001, RTRDAWDS *q, r, p, y* ) \* TLMP *y*) **/**

(Max (0.001, RTRDAWDS *q, r, p, y*)\* TLMP *y*)

Where for RRS:

RTRRNET *q, r*  = RTRRREV *q, r*  - (¼)\* RTRRREVT *q, r, p*

RTRRREVT*q, r, p* = RTRRWAPR *q, r, p* \* RTRRAWD *q, r*

RTRRWAPR *q, r, p* = (RTRROPR *q, r, p, y* \* Max (0.001, RTRRAWDS *q, r, p, y*) \* TLMP *y*) **/**(Max (0.001, RTRRAWDS *q, r, p, y*)\* TLMP *y*)

Where for Non-Spin:

RTNSNET *q, r*  = RTNSREV *q, r*  - (¼)\* RTNSREVT *q, r, p*

RTNSREVT*q, r, p* = RTNSWAPR *q, r, p* \* RTNSAWD *q, r*

RTNSWAPR *q, r, p* = (RTNSOPR *q, r, p, y* \* Max (0.001, RTNSAWDS *q, r, p, y* ) \* TLMP *y*) **/**(Max (0.001, RTNSAWDS *q, r, p, y*)\* TLMP *y*)

Where for ERCOT Contingency Reserve (ECRS):

RTECRNET *q, r*  = RTECRREV *q, r*  - (¼)\* RTECRREVT *q, r*

RTECRREVT*q, r, p* = RTECRWAPR *q, r, p* \* RTECRAWD *q, r*

RTECRWAPR *q, r, p* = (RTECROPR *q, r, p, y* \* Max (0.001, RTECRAWDS *q, r, p, y*) \* TLMP *y*) **/** (Max (0.001, RTECRAWDS *q, r, p, y*)\* TLMP *y*)

The above variables are defined as follows:

| **Variable** | **Unit** | **Definition** |
| --- | --- | --- |
| EMREAMT *q, r, p* | $ | *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. |
| RTENET *q, r, p* | $ | *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. |
| RTASNET *q, r,* | $ | *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. |
| RTEREV *q, r, p* | $ | *Real-Time Energy Revenue*— The calculated Real-Time energy revenue at the RTSPP for QSE *q* calculated forResource *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. |
| EMREGEN *q, r, p* | 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 *q, r, p* | 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. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| RTEREVT *q, r, p* | $ | *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. |
| EBPWAPRGEN *q, r, p* | $/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 *q, r, p* | $/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. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| AEBPGEN*q, r, p* | 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*q, r, p* | 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. |
| EBP *q, r, p, y* | 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. |
| EBPPR *q, r, p, y* | $/MWh | *Emergency Base Point Price per QSE per Settlement Point per Resource by interval*—The average incremental energy cost calculated per the Energy Offer Curve or Energy Bid/Offer Curve corresponding to the Emergency Base Point for Resource *r* at Resource Node *p* represented by QSE *q* for the Emergency Base Point interval or SCED interval *y*. The Energy Offer Curve shall be capped by the MOC pursuant to Section 4.4.9.4.1, Mitigated Offer Cap, and the Energy Bid/Offer Curve shall be capped by the maximum RTSPP at the Settlement Point for the Operating Day, per paragraph (10)(b) of Section 6.6.9. Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| RTSPP *p* | $/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. |
| RTMG *q, r, p* | MWh | *Real-Time Metered Generation per QSE per Settlement Point per Resource*—The metered generation of 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. |
| RTCL *q, r, p* | MWh | *Real-Time Charging Load per QSE per Resource per Settlement Point* —The charging load for Resource *r* at Resource Node *p* represented by the QSE *q,* represented as a negative value,for the 15-minute Settlement Interval. |
| RTRUNET *q, r* | $ | *Real-Time Reg-Up Net Revenue–* The difference between the Real-Time Reg-Up Revenue and the Real-Time Reg-Up Revenue Target 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. |
| RTRDNET *q, r* | $ | *Real-Time Reg-Down Net Revenue –* The difference between calculated revenue for the Real-Time Reg-Down Revenue and the Real-Time Reg-Down Revenue Target 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. |
| RTRRNET *q, r* | $ | *Real-Time Responsive Reserve Net Revenue –* The difference between Real-Time RRS Revenue and the Real-Time RRS Revenue Target 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. |
| RTNSNET *q, r* | $ | *Real-Time Non-Spin Net Revenue –* The difference between Real-Time Non-Spin Revenue and the Real-Time Non-Spin Revenue Target for Resource *r* for the 15-minute Settlement Interval. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| RTECRNET *q, r* | $ | *Real-Time ERCOT Contingency Reserve Service Net Revenue –* The difference between Real-Time ECRS Revenue and the Real-Time ECRS Revenue Target for Resource *r* for the 15-minute Settlement Interval. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| RTRUREV *q, r* | $ | *Real-Time Reg-Up Revenue*— The calculated Real-Time Reg-Up revenue for QSE *q* calculated forResource *r* for the 15-minute Settlement Interval. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| RTRDREV *q, r* | $ | *Real-Time Reg-Down Revenue*— The calculated Real-Time Reg-Down revenue for QSE *q* calculated forResource *r* for the 15-minute Settlement interval. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| RTRRREV *q, r* | $ | *Real-Time Responsive Reserve Revenue*— The calculated Real-Time RRS revenue for QSE *q* calculated forResource *r* for the 15-minute Settlement interval. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| RTNSREV *q, r* | $ | *Real-Time Non-Spin Revenue*— The calculated Real-Time Non-Spin revenue for QSE *q* calculated forResource *r* for the 15-minute Settlement interval. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| RTECRREV *q, r* | $ | *Real-Time ERCOT Contingency Reserve Service Revenue*— The calculated Real-Time ECRS revenue for QSE *q* calculated forResource *r* for the 15-minute Settlement interval. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| RTRUREVT *q, r* | $ | *Real-Time Reg-Up Revenue Target –* The revenue target of the Reg-Up award to Resource *r* represented by QSE *q* based on the Ancillary Service Offer for the 15-minute Settlement Interval. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| RTRDREVT *q, r* | $ | *Real-Time Reg-Down Revenue Target –* The revenue target of the Reg-Down award to Resource *r* represented by QSE *q* based on the Ancillary Service Offer for the 15-minute Settlement Interval. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| RTRRREVT *q, r* | $ | *Real-Time Responsive Reserve Revenue Target –* The revenue target of the RRS award to Resource *r* represented by QSE *q* based on the Ancillary Service Offer for the 15-minute Settlement Interval. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| RTNSREVT *q, r* | $ | *Real-Time Non-Spin Revenue Target –* The revenue target of the Non-Spin award to Resource *r* represented by QSE *q* based on the Ancillary Service Offer for the 15-minute Settlement Interval. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| RTECRREVT *q, r* | $ | *Real-Time ERCOT Contingency Reserve Service Revenue Target –* The revenue target of the ECRS award to Resource *r* represented by QSE *q* based on the Ancillary Service Offer for the 15-minute Settlement Interval. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| RTRUWAPR *q, r, p* | $/MW | *Real-Time Reg-Up Weighted-Average Price –* The weighted average of the Ancillary Service Offer prices corresponding with the Reg-Up awards on the Ancillary Service Offer curves 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. |
| RTRDWAPR *q, r, p* | $/MW | *Real-Time Reg-Down Weighted-Average Price –* The weighted average of the Ancillary Service Offer prices corresponding with the Reg-Down awards on the Ancillary Service Offer curves 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. |
| RTRRWAPR *q, r, p* | $/MW | *Real-Time Responsive Reserve Weighted-Average Price –* The weighted average of the Ancillary Service Offer prices corresponding with the RRS awards on the Ancillary Service Offer curves 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. |
| RTNSWAPR *q, r, p* | $/MW | *Real-Time Non-Spin Weighted-Average Price –* The weighted average of the Ancillary Service Offer prices corresponding with the Non-Spin awards on the Ancillary Service Offer curves 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. |
| RTECRWAPR *q, r, p* | $/MW | *Real-Time ERCOT Contingency Reserve Service Weighted-Average Price –* The weighted average of the Ancillary Service Offer prices corresponding with the ECRS awards on the Ancillary Service Offer curves 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. |
| RTRUAWD *q, r* | MW | *Real-Time Reg-Up Award per Resource per QSE*— The Reg-Up amount awarded to QSE *q* for Resource *r* in Real-Time for the 15-minute Settlement Interval. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| RTRDAWD *q, r* | MW | *Real-Time Reg-Down Award per Resource per QSE*— The Reg-Down amount awarded to QSE *q* for Resource *r* in Real-Time for the 15-minute Settlement Interval. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| RTRRAWD *q, r* | MW | *Real-Time Responsive Reserve Award per Resource per QSE*— The RRS amount awarded to QSE *q* for Resource *r* in Real-Time for the 15-minute Settlement Interval. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| RTNSAWD *q, r* | MW | *Real-Time Non-Spin Award per Resource per QSE*— The Non-Spin amount awarded to QSE *q* for Resource *r* in Real-Time for the 15-minute Settlement Interval. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| RTECRAWD *q, r* | MW | *Real-Time ERCOT Contingency Reserve Service Award per Resource per QSE*— The ECRS amount awarded to QSE *q* for Resource *r* in Real-Time for the 15-minute Settlement Interval. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| RTRUOPR *q, r, p, y* | $/MW | *Real-Time Reg-Up Offer Price –* The price on the Ancillary Service Offer curve at the Reg-Up award of Resource *r* at Resource Node *p* represented by QSE *q* for the SCED interval *y*. Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| RTRDOPR *q, r, p, y* | $/MW | *Real-Time Reg-Down Offer Price –* The price on the Ancillary Service Offer curve at the Reg-Down award of Resource *r* at Resource Node *p* represented by QSE *q* for the SCED interval *y*. Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| RTRROPR *q, r, p, y* | $/MW | *Real-Time Responsive Reserve Offer Price –* The price on the Ancillary Service Offer curve at the RRS award of Resource *r* at Resource Node *p* represented by QSE *q* for the SCED interval *y*. Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| RTNSOPR *q, r, p, y* | $/MW | *Real-Time Non-Spin Offer Price –* The price on the Ancillary Service Offer curve at the Non-Spin award of Resource *r* at Resource Node *p* represented by QSE *q* for the SCED interval *y*. Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| RTECROPR *q, r, p, y* | $/MW | *Real-Time ERCOT Contingency Reserve Service Offer Price –* The price on the Ancillary Service Offer curve at the ECRS award of Resource *r* at Resource Node *p* represented by QSE *q* for the SCED interval *y*. Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| RTRUAWDS *q, r, p, y* | MW | *Real-Time Reg-Up Award per Resource per QSE per SCED interval -* The Reg-Up amount awarded to QSE *q* for Resource *r* in Real-Timefor the SCED interval *y.* Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| RTRDAWDS *q, r, p, y* | MW | *Real-Time Reg-Down Award per Resource per QSE per SCED interval -* The Reg-Down amount awarded to QSE *q* for Resource *r* in Real-Timefor the SCED interval *y.* Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| RTRRAWDS *q, r, p, y* | MW | *Real-Time Responsive Reserve Award per Resource per QSE per SCED interval -* The RRS amount awarded to QSE *q* for Resource *r* in Real-Timefor the SCED interval *y.* Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| RTNSAWDS *q, r, p, y* | MW | *Real-Time Non-Spin Award per Resource per QSE per SCED interval -* The Non-Spin amount awarded to QSE *q* for Resource *r* in Real-Timefor the SCED interval *y.* Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| RTECRAWDS *q, r, p, y* | MW | *Real-Time ERCOT Contingency Reserve Service Award per Resource per QSE per SCED interval -* The ECRS amount awarded to QSE *q* for Resource *r* in Real-Timefor the SCED interval *y.* Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| TLMP *y* | second | *Duration of Emergency Base Point interval or SCED interval per interval*—The duration of the portion of the Emergency Base Point interval or SCED interval *y* within the 15-minute Settlement Interval. |
| *q* | none | A QSE. |
| *p* | none | A Resource Node Settlement Point. |
| *r* | none | A Generation Resource or ESR. |
| *y* | none | An Emergency Base Point interval or SCED interval that overlaps the 15-minute Settlement Interval. |
| 3600 | none | The number of seconds in one hour. |

(3) The extension of the Energy Offer Curve or Energy Bid/Offer Curve is used to calculate the Emergency Base Point Price. If the Emergency Base Point MW value is greater than the largest MW value on the Energy Offer Curve or Energy Bid/Offer Curve submitted by the QSE for the Resource, then the Energy Offer Curve or Energy Bid/Offer Curve is extended to the Emergency Base Point MW value with a $/MWh value that is the MOC (pursuant to Section 4.4.9.4.1) for the highest MW output on the Energy Offer Curve or Energy Bid/Offer Curve submitted by the QSE for the Resource.

Q1 Q2 SCED Q3 EBP MW

$/

MWh

P 3

P2

P1

The area under the capped Energy Offer Curve equals

(EBPPR \* (EBP – SCED BP))

Mitigated Offer Cap

Extended portion of Energy Offer Curve

Q1 Q2 SCED Q3 EBP MW

$/

MWh

P 3

P2

P1

The area under the capped Energy Offer Curve equals

(EBPPR \* (EBP – SCED BP))

Mitigated Offer Cap

Extended portion of Energy Offer Curve

(4) The total additional compensation to each QSE for emergency Settlement of Resources for the 15-minute Settlement Interval is calculated as follows:

**EMREAMTQSETOT *q* = EMREAMT *q, r, p***

The above variables are defined as follows:

| **Variable** | **Unit** | **Definition** |
| --- | --- | --- |
| EMREAMTQSETOT *q* | $ | *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. |
| EMREAMT *q, r, p* | $ | *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. |
| *q* | none | A QSE. |
| *p* | none | A Resource Node Settlement Point. |
| *r* | none | A Generation Resource or ESR. |

**6.6.9.2 Charge for Emergency Operations Settlement**

(1) The total cost for additional compensation for emergency Settlement as calculated in Section 6.6.9.1, Payment for Emergency Operations Settlement, is allocated to the QSEs representing Loads based on LRS. The charge to each QSE for a given 15-minute Settlement Interval is calculated as follows:

**LAEMREAMT *q* = (-1) \* EMREAMTTOT \* LRS *q***

Where:

EMREAMTTOT = EMREAMTQSETOT *q*

The above variables are defined as follows:

| **Variable** | **Unit** | **Definition** |
| --- | --- | --- |
| LAEMREAMT *q* | $ | *Load-Allocated Emergency Energy Amount per QSE*—The QSE *q*’s Load-allocated amount of the total payments for all the Resources with Real-Time Emergency Base Points, 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. |
| EMREAMTQSETOT *q* | $ | *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. |
| LRS *q* | none | The LRS 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. |
| *q* | none | A QSE. |

**6.6.12.1 Switchable Generation Make-Whole Payment**

(1) To compensate QSEs representing SWGRs that switch to the ERCOT Control Area from a non-ERCOT Control Area pursuant to an ERCOT RUC instruction for an actual or anticipated EEA condition, ERCOT shall calculate a Switchable Generation Make-Whole Payment (SWMWAMT) for an Operating Day, allocated to each instructed Operating Hour as follows:

**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*

WRTREV *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*)

The above variables are defined as follows:

| **Variable** | **Unit** | **Definition** |
| --- | --- | --- |
| SWMWAMT *q, r* | $ | *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. |
| SWCG *q, r, d* | $ | *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. |
| OPC *r, d* | $ | *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. |
| AENG *r, i* | MWh | *Awarded Energy Non-ERCOT Day-Ahead Market* – The awarded energy in the non-ERCOT Day-Ahead Market for the Resource *r* during the Interval *i*. The awarded energy in the non-ERCOT Control Area Day-Ahead market represents the energy award for the interval that was not generated by the Resource due to the switch to ERCOT. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| SWSUC *q ,r, d* | $ | *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. |
| SWPSLR *q ,r, d* | $ | *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. |
| RTLPX *q, r, i* | MWh | *Real-Time Proxy Generation per QSE per Resource by Settlement Interval*—The Real-Time energy that was not generated in ERCOT by Combined Cycle Train, *r*, represented by QSE *q*, for the 15-minute Settlement Interval *i*, due to a reduction in output that was necessary to facilitate a switch of another unit in the same Combined Cycle Train to the ERCOT System from a non-ERCOT Control Area, or to a non-ERCOT Control Area from the ERCOT System, when the switch is instructed by ERCOT.  During a shutdown to switch to ERCOT, the value of RTLPX will be determined based on the reduced generation, by interval, for the period starting from the commencement of the shutdown sequence in the non-ERCOT Control Area until breaker close in ERCOT. The reduction in generation shall be determined based on the last metered output value for the Combined Cycle Generation Resource operating in ERCOT immediately prior to the commencement of the shutdown sequence in the non-ERCOT Control Area as compared with the actual metered output during the relevant period, but only to the extent ERCOT determines the reduction in output was necessary to facilitate the switch.  During a shutdown after an ERCOT release of the SWGR, the value of RTLPX will be determined based on the reduced generation, by interval, for the period starting from the commencement of the shutdown sequence in the ERCOT Control Area until breaker close in the non-ERCOT Control Area, with a maximum duration equal to the duration of the switch from the non-ERCOT Control Area to ERCOT pursuant to the RUC instruction. This proxy value will apply only if the QSE shuts down the unit within 60 minutes after the ERCOT release. The reduction in generation shall be determined based on the last metered output value for the Combined Cycle Generation Resource operating in ERCOT immediately prior to the commencement of the shutdown sequence in ERCOT, as compared with the actual metered output during the relevant period, but only to the extent ERCOT determines the reduction in output was necessary to facilitate the switch. |
| SFC *d* | MMBtu | *Saved Fuel Consumption* — Fuel quantity saved due to an output reduction of the combustion turbine(s) operating in ERCOT during the relevant period if necessary to accommodate the switch to and from the ERCOT area. |
| SWSF | None | *Switchable Generation* *Startup Factor* —The Switchable Generation Startup Factor for an SWGR. 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. |
| SWMEC *q, r, d* | $ | *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. |
| SWOC *q, r, d* | $ | *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. Switchable generation operating cost represents the Real-Time operating costs in ERCOT reduced by the savings in operating costs not incurred due to the switch from the non-ERCOT Control Area. |
| SWAC *q, r, d* | $ | *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. |
| SWFC *q, r, d* | $ | *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, Incremental Fuel Costs for Switchable Generation Make-Whole Payment. |
| SWFIPC *q, r, d* | $ | *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. |
| SWEIC *q, r, d* | $ | *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 DAM 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. |
| SWASIC *q, r, d* | $ | *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. |
| SWMWDC *q, r, d* | $ | *Switchable Generator* *Make-Whole Payment Distribution Cost* —The Make-Whole Payment distribution costsfor 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. |
| SWRTREV *q, r, d* | $ | *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. |
| GASPERSU *r, s* | none | *Percent of Natural Gas to Operate per Start*—The percentage of natural gas used by Resource *r* to operate per start *s*, as approved in the verifiable cost process. Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| OILPERSU *r, s* | none | *Percent of Oil to Operate per Start*—The percentage of fuel oil used by Resource *r* to operate per start *s*, as approved in the verifiable cost process. Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| SFPERSU *r, s* | none | *Percent of Solid Fuel to Operate per Start*—The percentage of solid fuel used by Resource *r* to operate per start *s*, as approved in the verifiable cost process. Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| GASPERME *r* | None | *Percent of Natural Gas to Operate at LSL*—The percentage of natural gas used by Resource *r* to operate at LSL, as approved in the verifiable cost process. Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| OILPERME *r* | None | *Percent of Oil to Operate at LSL*—The percentage of fuel oil used by Resource *r* to operate at LSL, as approved in the verifiable cost process. Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| SFPERME *r* | None | *Percent of Solid Fuel to Operate at LSL*—The percentage of solid fuel used by Resource *r* to operate at LSL, as approved in the verifiable cost process. Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| DAFCRS *r, s* | MMBtu/Start | *Day-Ahead Actual Fuel Consumption Rate per Start*—The actual fuel consumption rate for Resource *r* to startup per start type *s*, adjusted by VOXR as defined in the Verifiable Cost Manual. Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. For additional information, see Verifiable Cost Manual Section 3.3, Startup Fuel Consumption. |
| VOMS *r, s* | $/Start | *Variable Operations and Maintenance Cost per Start*—The operations and maintenance cost for Resource *r* to startup, per start *s*, including an adjustment for emissions costs. Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. For additional information, see Verifiable Cost Manual Section 3.2, Submitting Startup Costs. |
| VOMLSL *r* | $/MWh | *Variable Operations and Maintenance Cost at LSL*—The operations and maintenance cost for Resource *r* to operate at LSL, including an adjustment for emissions costs. Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. For additional information, see Verifiable Cost Manual Section 4.2, Submitting Minimum Energy Costs. |
| LSL *q, r, i* | MW | *Low Sustained Limit*—The LSL of Generation Resource *r* represented by QSE *q* for the hour that includes the Settlement Interval *i*, as submitted in the COP. Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| RTMG *q, r, i* | MWh | *Real-Time Metered Generation per QSE per Resource by Settlement Interval by hour*—The Real-Time energy from Resource *r* represented by QSE *q*, for the 15-minute Settlement Interval *i*. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| AHR *r, i* | 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. |
| OM *r* | $/MWh | *Verifiable Operations and Maintenance Cost Above LSL*– The O&M cost for Resource *r* to operate above LSL. 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. |
| SWIHR *q, r, d* | 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. |
| SFP | $/MMBtu | Solid Fuel Price—The solid fuel index price is $1.50. |
| GASPEROL *r* | none | *Percent of Natural Gas to Operate Above LSL*—The percentage of natural gas used by Resource *r* to operate above LSL, as approved in the verifiable cost process. Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| OILPEROL *r* | none | *Percent of Oil to Operate Above LSL*—The percentage of fuel oil used by Resource *r* to operate above LSL, as approved in the verifiable cost process. Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| SFPEROL *r* | none | *Percent of Solid Fuel to Operate Above LSL*—The percentage of solid fuel used by Resource *r* to operate above LSL, as approved in the verifiable cost process. Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| ADJSWSUC *q, r, d* | $ | *Adjustment to Switchable Generation* *Start-Up Cost* — Adjustment to Switchable Generation Start-up 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. |
| RCGSC s, *rc* | $/Start | *Resource Category Generic Startup Cost*—The Resource Category Generic Startup Cost cap for the category of the Resource *rc*, according to Section 4.4.9.2.3, Startup Offer and Minimum-Energy Offer Generic Caps, for the Operating Day. |
| RCGMEC *i, rc* | $/MWh | *Resource Category Generic Minimum-Energy Cost*—The Resource Category Generic Minimum Energy Cost cap for the category of the Resource *rc*, according to Section 4.4.9.2.3, for the Operating Day. |
| PAHR *r, i* | 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. |
| STOM *rc* | $/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. |
| RTSPP *p, i* | $/MWh | *Real-Time Settlement Point Price*—The Real-Time Settlement Point Price at Settlement Point *p*, for the 15-minute Settlement Interval *i*. |
| FIP | $/MMBtu | *Fuel Index Price*—As defined in Section 2.1, Definitions. |
| FOP | $/MMBtu | *Fuel Oil Price*—As defined in Section 2.1. |
| FA *r* | $/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. |
| EMREAMT *q, r, p, i* | $ | *Emergency Energy Amount per QSE per Settlement Point per unit per interval*—The payment to QSE *q* for the additional energy or Ancillary Services produced or consumed by Resource *r* at Resource Node *p* in Real-Time during the Emergency Condition, for the 15-minute Settlement Interval *i*. Payment for emergency energy is made to the Combined Cycle Train. |
| VSSVARAMT *q, r, i* | $ | *Voltage Support Service VAr Amount per QSE per Generation Resource -* The payment to QSE *q* for the VSS provided by Generation Resource *r,* for the 15-minute Settlement Interval *i*. Where for a Combined Cycle Resource *r* is a Combined Cycle Train. |
| VSSEAMT *q, r, i* | $ | *Voltage Support Service Energy Amount per QSE per Generation Resource*—The lost opportunity payment to QSE *q* for ERCOT-directed VSS from Generation Resource *r* for the 15-minute Settlement Interval *i*. Where for a Combined Cycle Resource *r* is a Combined Cycle Train. |
| RTRUREV *q, r* | $ | *Real-Time Reg-Up Revenue*— The Real-Time Reg-Up revenue for QSE *q* calculated forResource *r* for the 15-minute Settlement Interval. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| RTRDREV *q, r* | $ | *Real-Time Reg-Down Revenue*— The Real-Time Reg-Down revenue for QSE *q* calculated for Resource *r* for the 15-minute Settlement Interval. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| RTRRREV *q, r* | $ | *Real-Time Responsive Reserve Revenue*— The Real-Time RRS revenue for QSE *q* calculated for Resource *r* for the 15-minute Settlement Interval. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| RTNSREV *q, r* | $ | *Real-Time Non-Spin Revenue*— The Real-Time Non-Spin revenue for QSE *q* calculated for Resource *r* for the 15-minute Settlement Interval. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| RTECRREV *q, r* | $ | *Real-Time ERCOT Contingency Reserve Service Revenue*— The Real-Time ECRS revenue for QSE *q* calculated for Resource *r* for the 15-minute Settlement Interval. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| *q* | none | A QSE. |
| *r* | none | A Switchable Generation Resource. |
| *d* | none | An Operating Day containing the RUC instruction to the SWGR. |
| *i* | none | A 15-minute Settlement Interval within the hour of an Operating Day during which the SWGR is instructed by ERCOT. |
| *s* | none | An ERCOT area start that is eligible to have its costs included in the Switchable Generation Cost Guarantee. |
| *rc* | none | A Resource Category. |
| *p* | none | A Resource Node Settlement Point. |

(2) The total compensation to each QSE for the Switchable Generation Make-Whole Payment for a given hour in the Operating Day is calculated as follows:

**SWMWAMTQSETOT *q* =  SWMWAMT *q, r***

The above variables are defined as follows:

| **Variable** | **Unit** | **Definition** |
| --- | --- | --- |
| SWMWAMTQSETOT ***q*** | $ | *Switchable Generation Make-Whole Payment per QSE*—The total Switchable Generation Make-Whole Payment to the QSE *q*, for the hour. |
| SWMWAMT *q, r* | $ | *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. |
| *q* | none | A QSE. |
| *r* | none | A Switchable Generation Resource. |

***9.5.3 Real-Time Market Settlement Charge Types***

(1) ERCOT shall provide, on each RTM Settlement Statement, the dollar amount for each RTM Settlement charge and payment. The RTM Settlement “Charge Types” are:

(a) Section 5.7.1, RUC Make-Whole Payment;

(b) Section 5.7.2, RUC Clawback Charge;

(c) Section 5.7.3, Payment When ERCOT Decommits a QSE-Committed Resource;

(d) Section 5.7.4.1, RUC Capacity-Short Charge;

(e) Section 5.7.4.2, RUC Make-Whole Uplift Charge;

(f) Section [5.7.5, RUC Clawback Payment](#_Toc109528011);

(g) Section [5.7.6, RUC Decommitment Charge](#_Toc109528014);

(h) Section 6.6.3.1, Real-Time Energy Imbalance Payment or Charge at a Resource Node;

(i) Section 6.6.3.2, Real-Time Energy Imbalance Payment or Charge at a Load Zone;

(j) Section 6.6.3.3, Real-Time Energy Imbalance Payment or Charge at a Hub;

(k) Section 6.6.3.4, Real-Time Energy Payment for DC Tie Import;

(l) Section 6.6.3.5, Real-Time Payment for a Block Load Transfer Point;

(m) Section 6.6.3.6, Real-Time Energy Charge for DC Tie Export Represented by the QSE Under the Oklaunion Exemption;

(n) Section 6.6.3.7, Real-Time High Dispatch Limit Override Energy Payment;

(o) Section 6.6.3.8, Real-Time High Dispatch Limit Override Energy Charge;

|  |
| --- |
| ***[NPRR917: Insert item (p) below upon system implementation and renumber accordingly:]***  (p) Section 6.6.3.9, Real-Time Payment or Charge for Energy from a Settlement Only Distribution Generator (SODG) or a Settlement Only Transmission Generator (SOTG); |

(p) Section 6.6.4, Real-Time Congestion Payment or Charge for Self-Schedules;

(q) Section 6.6.5.1.1.1, Set Point Deviation Charge for Over Generation;

(r) Section 6.6.5.1.1.2, Set Point Deviation Charge for Under Generation;

(s) Section 6.6.5.1.1.3, Controllable Load Resource Set Point Deviation Charge for Over Consumption;

(t) Section 6.6.5.1.1.4, Controllable Load Resource Set Point Deviation Charge for Under Consumption;

|  |
| --- |
| ***[NPRR963: Insert items (u) and (v) below upon system implementation and renumber accordingly:]***  (u) Section 6.6.5.3, Controllable Load Resource Set Point Deviation Charge for Over Consumption;  (v) Section 6.6.5.3.1, Controllable Load Resource Set Point Deviation Charge for Under Consumption; |

(u) Section 6.6.5.2, IRR Generation Resource Set Point Deviation Charge;

|  |
| --- |
| ***[NPRR963: Insert items (x) and (y) below upon system implementation and renumber accordingly:]***  (x) Section 6.6.5.5, Energy Storage Resource Set Point Deviation Charge for Over Performance;  (y) Section 6.6.5.5.1, Energy Storage Resource Set Point Deviation Charge for Under Performance; |

(v) Section 6.6.5.4, Set Point Deviation Payment;

(w) Section 6.6.6.1, RMR Standby Payment;

(x) Section 6.6.6.2, RMR Payment for Energy;

(y) Section 6.6.6.3, RMR Adjustment Charge;

(z) Section 6.6.6.4, RMR Charge for Unexcused Misconduct;

(aa) Section 6.6.6.5, RMR Service Charge;

(bb) Section 6.6.6.6, Method for Reconciling RMR Actual Eligible Costs, RMR and MRA Contributed Capital Expenditures, and Miscellaneous RMR Incurred Expenses;

|  |
| --- |
| ***[NPRR885: Insert items (cc)-(hh) below upon system implementation and renumber accordingly:]***  (cc) Section 6.6.6.7, MRA Standby Payment;  (dd) Section 6.6.6.8, MRA Contributed Capital Expenditures Payment;  (ee) Section 6.6.6.9, MRA Payment for Deployment Event;  (ff) Section 6.6.6.10, MRA Variable Payment for Deployment;  (gg) Section 6.6.6.11, MRA Charge for Unexcused Misconduct;  (hh) Section 6.6.6.12, MRA Service Charge; |

(cc) Paragraph (3) of Section 6.6.7.1, Voltage Support Service Payments;

(dd) Paragraph (5) of Section 6.6.7.1;

(ee) Section 6.6.7.2, Voltage Support Charge;

(ff) Section 6.6.8.1, Black Start Hourly Standby Fee Payment;

(gg) Section 6.6.8.2, Black Start Capacity Charge;

(hh) Section 6.6.9.1, Payment for Emergency Operations Settlement;

(ii) Section 6.6.9.2, Charge for Emergency Operations Settlement;

(jj) Section 6.6.10, Real-Time Revenue Neutrality Allocation;

(kk) Section 6.6.11.1, Emergency Response Service Capacity Payments;

ll) Section 6.6.11.2, Emergency Response Service Capacity Charge; (























(mm) Section 6.7.4, Real-Time Settlement for Updated Day-Ahead Market Ancillary Service Obligations;

(nn) Section 6.7.5.2, Regulation Up Service Payments and Charges;

(oo) Section 6.7.5.3, Regulation Down Service Payments and Charges;

(pp) Section 6.7.5.4, Responsive Reserve Payments and Charges;

(qq) Section 6.7.5.5 , Non-Spinning Reserve Payments and Charges;

(rr) Section 6.7.5.6 , ERCOT Contingency Reserve Service Payments and Charges;

(ss) Section 6.7.5.7 , Real-Time Derated Ancillary Service Capability Payment;

(tt) Section 6.7.5.8 , Real-Time Derated Ancillary Service Capability Charge;

(uu) Section 6.7.6, Real Time Ancillary Service Revenue Neutrality Allocation ;

(vv) Section 7.9.2.1, Payments and Charges for PTP Obligations Settled in Real-Time; and

(ww) Section 9.16.1, ERCOT System Administration Fee.

(2) In the event that ERCOT is unable to execute the Day-Ahead Market (DAM), ERCOT shall provide, on each RTM Settlement Statement, the dollar amount for the following RTM Congestion Revenue Right (CRR) Settlement charges and payments:

(a) Section 7.9.2.4, Payments for FGRs in Real-Time; and

(b) Section 7.9.2.5, Payments and Charges for PTP Obligations with Refund in Real-Time.