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| NPRR Number |  | NPRR Title | Nodal Pricing for Non-Modeled Generators and Distributed Generation Registered with ERCOT for Settlement Purposes |
| Date Posted | |  | |
|  | |  | |
| Requested Resolution | | Normal | |
| Nodal Protocol Sections Requiring Revision | | 3.10.7.3, Modeling of Private Use Networks  6.6.3.2, Real-Time Energy Imbalance Payment or Charge at a Load Zone  6.6.3.9, Real-Time Payment or Charge for Energy from Non-Modeled Generators and Distributed Generation Registered with ERCOT (new)  6.6.10, Real-Time Revenue Neutrality Allocation  9.5.3, Real-Time Market Settlement Charge Types  9.19.1, Default Uplift Invoices  16.11.4.3.2, Real-Time Liability Estimate | |
| Related Documents Requiring Revision/Related Revision Requests | | None | |
| Revision Description | | This Nodal Protocol Revision Request (NPRR) implements nodal energy pricing, instead of the current zonal energy pricing, for Non-Modeled Generators and Distributed Generation (DG) registered for ERCOT Settlement pursuant to paragraph (5) of Section 16.5, Registration of a Resource Entity.  For DG registered with ERCOT for the purpose of Settlements, which are mapped to a Load in the Network Operations Model as described in paragraph (3) of Section 3.10.7.2, Modeling of Resources and Transmission Loads, the energy price used as the basis for the 15-minute Real-Time price calculation is the price at the Electrical Bus associated with this mapped Load in the Network Operations Model.  For Non-Modeled Generators registered with ERCOT for the purpose of Settlements, the energy price used as the basis for the 15-minute Real-Time price calculation is the time-weighted price at the Electrical Bus as determined by ERCOT in review of the meter location of the Non-Modeled Generator in the Network Operations Model.  Please note that this NPRR does not propose to alter any other requirements or market rules pertaining to Non-Modeled Generators or DG registered with ERCOT. For example, under this NPRR, Non-Modeled Generators and DG registered with ERCOT:   * Are not considered Generation Resources; * Do not require Resource Node Settlement Points for Settlement purposes; * Are not eligible to participate in Security-Constrained Economic Dispatch (SCED) or in the Ancillary Services markets, and will not receive SCED Base Points; * Are not required to submit Current Operating Plans (COPs); and * Are not subject to Reliability Unit Commitment (RUC).   **This NPRR does not incorporate Wholesale Storage Load (WSL) treatment for electricity used in the storage process of a storage facility when the energy is subsequently re-generated and sold as wholesale energy from Non-Modeled Generators or DG registered with ERCOT. ERCOT prefers to focus this NPRR on implementing nodal energy pricing for existing (non-storage) generators and to separately discuss WSL with Market Participants at a later date.**  **This NPRR also does not propose to extend nodal energy pricing to unregistered DG, all of which are less than 1 MW in size or never export power to the distribution grid.** | |
| Reason for Revision | | Addresses current operational issues.  Meets Strategic goals (tied to the [ERCOT Strategic Plan](http://www.ercot.com/content/news/presentations/2013/ERCOT%20Strat%20Plan%20FINAL%20112213.pdf) or directed by the ERCOT Board).  Market efficiencies or enhancements  Administrative  Regulatory requirements  Other: (explain)  *(please select all that apply)* | |
| Business Case | | This NPRR would improve the current ERCOT market design, by implementing the use of a nodal energy price in the Settlement of Non-Modeled Generators and DG registered with ERCOT. Currently, zonal energy prices are used in the Settlement of these generators. Nodal energy prices would better align their operations with the overall nodal market design and the reliability needs of the ERCOT System.  For example, nodal pricing would provide proper incentives for Non-Modeled Generators and DG registered with ERCOT in transmission-constrained areas, such as:   * Generation pockets where Generation Resources are receiving negative Locational Marginal Prices (LMPs) due to transmission constraints, but when the zonal price remains positive. In such cases, even as negative LMPs provide correct incentives for Generation Resources to reduce their production, positive zonal price signals provide perverse incentives for Non-Modeled Generators and DG registered with ERCOT in the same generation pocket to continue producing or even increase production. * Load pockets where Generation Resources are receiving LMPs that are much higher than the zonal price due to transmission constraints, with the lower zonal prices failing to provide Non-Modeled Generators and DG registered with ERCOT with the incentive to produce and thus help to resolve the constraint.   In both cases, nodal price signals would provide proper incentives for the operation of Non-Modeled Generators and DG registered with ERCOT to match the reliability needs of the ERCOT System.  ERCOT notes that installations of Non-Modeled Generators and DG registered with ERCOT are trending upward. At the start of the Texas Nodal Market in December 2010, there were 14 distribution-connected Non-Modeled Generators and DG registered with ERCOT totaling 91 MW of capacity; today there are 144 such units with an overall capacity of 665 MW. At start of the Nodal market there were four transmission-connected Non-Modeled Generators with a total capacity of 142 MW; currently there are 13 such units totaling 433 MW of capacity. Notably, a significant majority of these Resources and their MW capacity are powered by fossil fuels, primarily natural gas and distillate fuel oil, indicating that these units are capable of actively responding to price signals.  This NPRR implements Settlement of Non-Modeled Generators and DG registered with ERCOT using nodal energy prices without requiring new Resource Nodes and without exposing Non-Modeled Generators to additional compliance risk. | |

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| Market Segment | Not applicable |

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| Comments |

Please note the following NPRRs also propose revisions to the following section(s):

* NPRR847, Exceptional Fuel Cost Included in the Mitigated Offer Cap
  + Section 9.5.3
* NPRR862, Updates to Address Revisions under PUCT Project 46369
  + Section 9.5.3

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| --- |
| Proposed Protocol Language Revision |

3.10.7.3 Modeling of Private Use Networks

(1) ERCOT shall create and use network models describing Private Use Networks according to the following:

(a) A Generation Entity with a Resource located within a Private Use Network shall provide data to ERCOT, for use in the Network Operations Model, for each of its individual generating unit(s) located within the Private Use Network in accordance with Section 3.3.2.1, Information to Be Provided to ERCOT, if it meets any one of the following criteria:

(i) Contains a generator greater than ten MW and is registered with the PUCT according to P.U.C. Subst. R. 25.109, Registration of Power Generation Companies and Self-Generators, as a power generation company; or

(ii) Is part of a Private Use Network which contains more than one connection to the ERCOT Transmission Grid; or

(iii) Contains generation registered to provide Ancillary Services.

(b) A Generation Entity with a generator greater than ten MW located within a Private Use Network which does not meet any of the criteria of item (a) above shall provide to ERCOT annually, or more often upon change, the following information for ERCOT’s use in the Network Operations Model, for each of its individual generating unit(s) located within the Private Use Network:

(i) Equipment owner(s);

(ii) Equipment operator(s);

(iii) TSP substation name connecting the Private Use Network to the ERCOT System;

(iv) At the request of ERCOT, a description of Transmission Elements within the Private Use Network that may be connected through breakers or switches;

(v) Net energy delivery metering, as required by ERCOT, to and from a the Private Use Network and the ERCOT System at the POI with the TSP;

(vi) For each individual generator located within the Private Use Network, the gross capacity in MW and its reactive capability curve;

(vii) Maximum and minimum reasonability limits of the Load located within the Private Use Network;

(viii) Outage schedule for each generation unit located within the Private Use Network, updated as changes occur from the annually submitted information; and

(ix) Other interconnection data as required by ERCOT.

(c) ERCOT shall ensure the Network Operations Model properly models the physical effect of the loss of generators and Transmission Elements on the ERCOT Transmission Grid equipment loading, voltage, and stability.

(d) ERCOT may require the owner or operator of a Private Use Network to provide information to ERCOT and the TSP on Transmission Facilities located within the Private Use Network for use in the Network Operations Model if the information is required to adequately model and determine the security of the ERCOT Transmission Grid, including data to perform loop flow analysis of Private Use Networks.

(e) ERCOT shall review submittals of modeling data from owners or operators of Private Use Networks assure that it will result in correct analysis of ERCOT Transmission Grid security.

6.6.3.2 Real-Time Energy Imbalance Payment or Charge at a Load Zone

(1) The payment or charge to each QSE for Energy Imbalance Service is calculated based on the Real-Time Settlement Point Price for the following amounts at a particular Load Zone Settlement Point:

(a) The amount of its Self-Schedules with sink specified at the Settlement Point; plus

(b) The amount of its DAM Energy Bids cleared in the DAM at the Settlement Point; plus

(c) The amount of its Energy Trades at the Settlement Point where the QSE is the buyer; minus

(d) The amount of its Self-Schedules with source specified at the Settlement Point; minus

(e) The amount of its energy offers cleared in the DAM at the Settlement Point; minus

(f) The amount of its Energy Trades at the Settlement Point where the QSE is the seller; minus

(g) Its AML at the Settlement Point.

(2) The payment or charge to each QSE for Energy Imbalance Service at a Load Zone for a given 15-minute Settlement Interval is calculated as follows:

RTEIAMT *q, p* = (-1) \* {[RTSPP *p* \* [(SSSK *q, p* \* ¼) + (DAEP *q, p* \* ¼) + (RTQQEP *q, p* \* ¼) – (SSSR *q, p* \* ¼) – (DAES *q, p* \* ¼) – (RTQQES *q, p* \* ¼)]] – [RTSPPEW *p* \* RTAML *q, p*]}

And

LZIMBAL *q, p =* (SSSK *q, p* \* ¼) + (DAEP *q, p* \* ¼) + (RTQQEP *q, p* \* ¼) – (SSSR *q, p* \* ¼) – (DAES *q, p* \* ¼) – (RTQQES *q, p* \* ¼) – RTAML *q, p*

The above variables are defined as follows:

| Variable | Unit | Description |
| --- | --- | --- |
| RTEIAMT *q, p* | $ | *Real-Time Energy Imbalance Amount per QSE per Settlement Point*—The payment or charge to QSE *q* for Real-Time Energy Imbalance Service at Settlement Point *p*, for the 15-minute Settlement Interval. |
| 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. |
| LZIMBAL *q, p* | MWh | *Load Zone Energy Imbalance per QSE per Settlement Point*—The Load Zone volumetric imbalance for QSE *q* for Real-Time Energy Imbalance Service at Settlement Point *p*, for the 15-minute Settlement Interval. |
| RTSPPEW *p* | $/MWh | *Real-Time Settlement Point Price Energy-Weighted*⎯The Real-Time Settlement Point Price at the Settlement Point *p*, for the 15-minute Settlement Interval that is weighted by the State Estimated Load for the Load Zone of each SCED interval within the 15-minute Settlement Interval. |
| RTAML *q, p* | MWh | *Real-Time Adjusted Metered Load per QSE per Settlement Point*—The sum of the AML at the Electrical Buses that are included in Settlement Point *p* represented by QSE *q* for the 15-minute Settlement Interval. |
| SSSK *q, p* | MW | *Self-Schedule with Sink at Settlement Point per QSE per Settlement Point*—The QSE *q*’s Self-Schedule with sink at Settlement Point *p*, for the 15-minute Settlement Interval. |
| DAEP *q, p* | MW | *Day-Ahead Energy Purchase per QSE per Settlement Point*—The QSE *q*’s DAM Energy Bids at Settlement Point *p* cleared in the DAM, for the hour that includes the 15-minute Settlement Interval. |
| RTQQEP *q, p* | MW | *Real-Time QSE-to-QSE Energy Purchase per QSE per Settlement Point*⎯The amount of MW bought by QSE *q* through Energy Trades at Settlement Point *p*, for the 15-minute Settlement Interval. |
| SSSR *q, p* | MW | *Self-Schedule with Source at Settlement Point per QSE per Settlement Point*—The QSE *q*’s Self-Schedule with source at Settlement Point *p*, for the 15-minute Settlement Interval. |
| DAES *q, p* | MW | *Day-Ahead Energy Sale per QSE per Settlement Point*—The QSE *q*’s energy offers at Settlement Point *p* cleared in the DAM, for the hour that includes the 15-minute Settlement Interval. |
| RTQQES *q, p* | MW | *Real-Time QSE-to-QSE Energy Sale per QSE per Settlement Point*⎯The amount of MW sold by QSE *q* through Energy Trades at Settlement Point *p*, for the 15-minute Settlement Interval. |
| *q* | none | A QSE. |
| *p* | none | A Load Zone Settlement Point. |

(3) The total net payments and charges to each QSE for Energy Imbalance Service at all Load Zones for the 15-minute Settlement Interval is calculated as follows:

RTEIAMTQSETOT *q* = RTEIAMT *q, p*

The above variables are defined as follows:

|  |  |  |
| --- | --- | --- |
| Variable | Unit | Definition |
| RTEIAMTQSETOT *q* | $ | *Real-Time Energy Imbalance Amount QSE Total per QSE*⎯The total net payments and charges to QSE *q* for Real-Time Energy Imbalance Service at all Load Zone Settlement Points for the 15-minute Settlement Interval. |
| RTEIAMT *q, p* | $ | *Real-Time Energy Imbalance Amount per QSE per Settlement Point*—The charge to QSE *q* for Real-Time Energy Imbalance Service at Settlement Point *p*, for the 15-minute Settlement Interval. |
| *q* | none | A QSE. |
| *p* | none | A Load Zone Settlement Point. |

6.6.3.9 Real-Time Payment or Charge for Energy from Non-Modeled Generators and Distributed Generation Registered with ERCOT

(1) The payment or charge to each QSE for energy from Non-Modeled Generators and Distributed Generation (DG) registered with ERCOT for the purpose of Settlements, pursuant to paragraph (5) of Section 16.5, Registration of a Resource Entity, shall be based on an identified nodal energy price, RTENMGPR, as described in this subsection.

(2) For DG registered with ERCOT for the purpose of Settlements, which are mapped to a Load in the Network Operations Model as described in paragraph (3) of Section 3.10.7.2, Modeling of Resources and Transmission Loads, the price used as the basis for the 15-minute Real-Time price calculation is the price at the electrical bus associated with this mapped Load in the Network Operations Model.

(3) For Non-Modeled Generators registered with ERCOT for the purpose of Settlements, the price used as the basis for the 15-minute Real-Time price calculation is the price at the electrical bus as determined by ERCOT in review of the meter location of the Non-Modeled Generator in the Network Operations Model.

(4) For a Non-Modeled Generator that is greater than ten MW, registered as a self-generator with the PUCT pursuant to P.U.C. Subst. R. 25.109, Registration of Power Generation Companies and Self-Generators and is required to have an ERCOT-Polled Settlement (EPS) Meter, the inflow and outflow of energy as measured by the Settlement Meters at the site shall be netted for each 15-minute Settlement Interval. In the event the net energy of the site for the 15-minute Settlement Interval is an injection into the grid, the energy flow as measured by each meter shall be priced at the nodal energy price (RTENMGPR, as defined in paragraph (6) below). In the event the net energy of the site for the 15-minute Settlement Interval is a withdrawal, this net energy withdrawal is treated as Load, this Load shall be settled accordingly at the zonal energy price (the Load Zone Settlement Point Price).

(5) For all Non-Modeled Generators a) 10 MW or less, b) greater than 10 MW, but not required to have an EPS Meter, or c) registered DG, the inflow and outflow of energy as measured by the Settlement Meters at the site shall not be netted. The outflow of energy into the grid as measured by each Settlement Meter for the 15-minute Settlement Interval shall be priced at the nodal energy price (RTENMGPR, as defined in paragraph (6) below), and the inflow of energy is treated as Load and shall be settled accordingly at the zonal energy price (the Load Zone Settlement Point Price).

(6) If the Non-Modeled Generator is greater than ten MW, registered with the PUCT according to P.U.C. Subst. R. 25.109 as a self-generator, and required to have and EPS Meter, the total payment or charge for each 15-minute Settlement Interval shall be calculated as follows:

**RTENMGTOT *gsc* = Max (0, )**

If RTENMGTOT *gsc* = 0 for a 15-minute Settlement Interval, then

The Load is included in the Real-Time AML per QSE and is included in the Real-Time energy imbalance payment or charge at a Load Zone.

Otherwise, when RTENMGTOT *gsc* **>** 0 for a 15-minute Settlement Interval, then

RTENMGSA *gsc* = (-1) \* [ ]

For all other Non-Modeled Generators and DG registered with ERCOT for the purpose of Settlements, the total payment or charge for each 15-minute Settlement Interval shall be calculated as follows:

RTENMGSA *gsc* = (-1) \* [ ]

Where the price for the Non-Modeled Generator Settlement Meter or DG registered with ERCOT is determined as follows:

RTENMGPR *b* = Max [-$251, (((SDWF *y* \* RTLMP *b, y*) + RTRSVPOR + RTRDP)]

Where:

RTRSVPOR = (SDWF  *y* \* RTORPA *y*)

RTRDP = (SDWF  *y* \* RTORDPA *y*)

SDWF *y* = TLMP *y* / TLMP *y*

The above variables are defined as follows:

| Variable | Unit | Description |
| --- | --- | --- |
| RTENMGTOT *gsc* | MWh | *Real-Time Energy Total for Non-Modeled Generator Site* —The net sum for all Settlement Meters included in Non-Modeled Generator site code *gsc*. A positive value indicates an injection of power to the ERCOT System. |
| RTENMGSA*gsc* | $ | *Payment or Charge Amount for Energy for a Non-Modeled Generator Site or Registered DG*—The total payment or charge to a Non-Modeled Generator site *gsc* or registered DG. |
| RTENMGPR *b* | $/MWh | *Real-Time Price for the Energy Metered for each Settlement Meter in a Non-Modeled Generator Site or Registered DG*⎯The Real-Time price for the Settlement Meter or registered DG for the 15-minute Settlement Interval. |
| MEBNMG *gsc, b* | MWh | *Metered Energy for a Non-Modeled Generator Site* ⎯The metered energy by the Settlement Meter at Electrical Bus *b* for Non-Modeled Generator site *gsc*. |
| OFNMG *gsc, b* | MWh | *Outflow as Measured for a Non-Modeled Generator Site or a Registered DG* ⎯The outflow as measured by the Settlement Meter(s) at Electrical Bus *b* for Non-Modeled Generator site *gsc* or registered DG. |
| RTRSVPOR | $/MWh | *Real-Time Reserve Price for On-Line Reserves*⎯The Real-Time Reserve Price for On-Line Reserves for the 15-minute Settlement Interval. |
| RTORPA*y* | $/MWh | *Real-Time On-Line Reserve Price Adder per interval*⎯The Real-Time On-Line Reserve Price Adder for the SCED interval *y*. |
| RTRDP | $/MWh | *Real-Time On-Line Reliability Deployment Price* ⎯The Real-Time price for the 15-minute Settlement Interval, reflecting the impact of reliability deployments on energy prices that is calculated from the Real-Time On-Line Reliability Deployment Price Adder. |
| RTORDPA*y* | $/MWh | *Real-Time On-Line Reliability Deployment Price Adder* ⎯The Real-Time Price Adder that captures the impact of reliability deployments on energy prices for the SCED interval *y*. |
| SDWF *y* | none | *SCED Duration Weighting Factor per interval*⎯The weight used in the Non-Modeled resource Price calculation for the portion of the SCED interval *y* within the Settlement Interval. |
| RTLMP *b, y* | $/MWh | *Real-Time Locational Marginal Price at bus per interval*⎯The Real-Time LMP for the meter at Electrical Bus *b*, for the SCED interval *y*. |
| TLMP *y* | second | *Duration of SCED interval per interval*⎯The duration of the SCED interval *y*. |
| *gsc* | none | A generation site code. |
| *b* | none | An Electrical Bus. |
| *y* | None | A SCED interval in the 15-minute Settlement Interval. The summation is over the total number of SCED runs that cover the 15-minute Settlement Interval. |

(7) The total net payments and charges to each QSE for Non-Modeled Generators and DG registered with ERCOT for the 15-minute Settlement Interval is calculated as follows:

RTENMGAMT *q* =

The above variables are defined as follows:

| Variable | Unit | Definition |
| --- | --- | --- |
| RTENMGAMT *q* | $ | *Real-Time Energy for Non-Modeled Generators and Registered DG Amount per QSE.* The total net payments and charges to QSE *q* for all Non-Modeled Generators and registered DG sites. |
| RTENMGSA*gsc* | $ | *Real-time Energy for Non-Modeled Generators and Registered DG Site Amount*—The total payment or charge to a Non-Modeled Generator and registered DG site. |
| *q* | none | A QSE. |
| *gsc* | none | A generation site code. |

6.6.10 Real-Time Revenue Neutrality Allocation

(1) ERCOT must be revenue-neutral in each Settlement Interval. Each QSE receives an allocated share, on a LRS basis, of the net amount of:

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

(b) Real-Time Energy Imbalance payments or charges under Section 6.6.3.2, Real-Time Energy Imbalance Payment or Charge at a Load Zone;

(c) Real-Time Energy Imbalance payments or charges under Section 6.6.3.3, Real-Time Energy Imbalance Payment or Charge at a Hub;

(d) Real-Time energy payments under Section 6.6.3.4, Real-Time Energy Payment for DC Tie Import;

(e) Real-Time energy payments under Section 6.6.3.5, Real-Time Payment for a Block Load Transfer Point;

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

(g) Real-Time Energy payments or charges under Section 6.6.3.9, Real-Time Payment or Charge for Energy from Non-Modeled Generators and Distributed Generation Registered with ERCOT;

(h) Real-Time congestion payments or charges under Section 6.6.4, Real-Time Congestion Payment or Charge for Self-Schedules; and

(i) Real-Time payments or charges to the Congestion Revenue Right (CRR) Owners under Section 7.9.2, Real-Time CRR Payments and Charges.

(2) The Real-Time Revenue Neutrality Allocation for each QSE for a given 15-minute Settlement Interval is calculated as follows:

LARTRNAMT *q* = (-1) \* (RTEIAMTTOT + BLTRAMTTOT + RTDCIMPAMTTOT + RTDCEXPAMTTOT + RTENMGAMTTOT + RTCCAMTTOT + RTOBLAMTTOT / 4 + RTOBLLOAMTTOT / 4) \* LRS *q*

Where:

Total Real-Time Energy Imbalance Payment (or Charge) at Settlement Point (or Hub)

RTEIAMTTOT = RTEIAMTQSETOT *q*

Total Real-Time Payment for BLT Resources

BLTRAMTTOT = BLTRAMTQSETOT *q*

Total Real-Time Payment for DC Tie Imports

RTDCIMPAMTTOT = RTDCIMPAMTQSETOT *q*

Total Real-Time Charge for DC Tie Exports (under “Oklaunion Exemption”)

RTDCEXPAMTTOT = RTDCEXPAMTQSETOT *q*

Total Real-Time Congestion Payment or Charge for Self-Schedules

RTCCAMTTOT = RTCCAMTQSETOT *q*

Total Real-Time Payment or Charge for Point-to-Point (PTP) Obligations

RTOBLAMTTOT = RTOBLAMTQSETOT *q*

Total Real-Time Payment for PTP Obligations with Links to Options

RTOBLLOAMTTOT = RTOBLLOAMTQSETOT *q*

Total Real-Time Energy Payment (or Charge) for energy from Non-Modeled Generators and Distributed Generation registered with ERCOT for the purpose of Settlements

RTENMGAMTTOT = RTENMGAMT *q*

The above variables are defined as follows:

| Variable | Unit | Description |
| --- | --- | --- |
| LARTRNAMT *q* | $ | *Load-Allocated Real-Time Revenue Neutrality Amount per QSE*—The QSE *q*’s share of the total Real-Time revenue neutrality amount, for the 15-minute Settlement Interval. |
| RTEIAMTTOT *q* | $ | *Real-Time Energy Imbalance Amount Total*—The total net payments and charges for Real-Time Energy Imbalance Service at all Settlement Points (Resource, Load Zone or Hub) for the 15-minute Interval. |
| BLTRAMTTOT | $ | *Block Load Transfer Resource Amount Total*⎯The total of payments for energy delivered into the ERCOT Region through BLT points for the 15-minute Settlement Interval. |
| RTDCIMPAMTTOT | $ | *Real-Time DC Import Amount Total*—The summation of payments for DC Tie imports for the 15-minute Settlement Interval. |
| RTDCEXPAMTTOT | $ | *Real-Time DC Export Amount Total*—The summation of charges to all QSEs under the “Oklaunion Exemption” for DC Tie exports for the 15-minute Settlement Interval. |
| RTCCAMTTOT | $ | *Real-Time Energy Congestion Cost Amount Total*—The total net congestion payments and charges for all Self-Schedules for the 15-minute Settlement Interval. |
| RTOBLAMTTOT | $ | *Real-Time Obligation Amount Total*—The sum of all payments and charges for PTP Obligations settled in Real-Time for the hour that includes the 15-minute Settlement Interval. |
| RTOBLLOAMTTOT | $ | *Real-Time Obligation with Links to an Option Amount Total*—The sum of all payments for PTP Obligations with Links to an Option settled in Real-Time for the hour that includes the 15-minute Settlement Interval. |
| RTEIAMTQSETOT *q* | $ | *Real-Time Energy Imbalance Amount QSE Total per QSE*⎯The total net payments and charges to QSE *q* for Real-Time Energy Imbalance at all Resource Node Settlement Points for the 15-minute Settlement Interval. |
| RTCCAMTQSETOT *q* | $ | *Real-Time Congestion Cost Amount QSE Total per QSE*⎯The total net congestion payments and charges to QSE *q* for its Self-Schedules for the 15-minute Settlement Interval. |
| BLTRAMTQSETOT *q* | $ | *Block Load Transfer Resource Amount QSE Total per QSE*⎯The total of the payments to QSE *q* for energy delivered into the ERCOT Region through BLT points for the 15-minute Settlement Interval. |
| RTDCIMPAMTQSETOT *q* | $ | *Real-Time DC Import Amount QSE Total per QSE*⎯The total of the payments to QSE *q* for energy imported into the ERCOT Region through DC Ties for the 15-minute Settlement Interval. |
| RTDCEXPAMTQSETOT *q* | $ | *Real-Time DC Export Amount QSE Total per QSE*⎯The total of the charges to QSE *q* for energy exported from the ERCOT Region through DC Ties for the 15-minute Settlement Interval. |
| RTOBLAMTQSETOT q | $ | *Real-Time Obligation Amount QSE Total per QSE*—The net total payment or charge to QSE *q* of all its PTP Obligations settled in Real-Time for the hour that includes the 15-minute Settlement Interval. See paragraph (2) of Section 7.9.2.1, Payments and Charges for PTP Obligations Settled in Real-Time. |
| RTOBLLOAMTQSETOT *q* | $ | *Real-Time Obligation with Links to an Option Amount QSE Total per QSE*—The total payment to QSE *q* for all of its PTP Obligations with Links to an Option settled in Real-Time for the hour that includes the 15-minute Settlement Interval. See paragraph (2) of Section 7.9.2.1. |
| RTENMGAMT *q* | $ | *Real-Time Energy Payment or Charge per QSE for Energy from Non-Modeled Generators and Distributed Generation* —The payment or charge to QSE *q* for Real-Time Energy from energy from Non-Modeled Generators and DG registered with ERCOT for the purpose of Settlements for the 15-minute Settlement Interval. |
| RTENMGAMTTOT | $ | *Real-Time Energy Amount Total for Energy from all Non-Modeled Generators and Distributed Generation* —The total net payments and charges to all QSEs for Real-Time Energy from Non-Modeled Generators and DG registered with ERCOT for the purpose of Settlements 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. |
| *o* | none | A CRR owner. |

(3) In the event that ERCOT is unable to execute the DAM, the Real-Time Revenue Neutrality Allocation for each QSE for a given 15-minute Settlement Interval is calculated as follows:

**LARTRNAMT *q* = (-1) \* (RTEIAMTTOT + BLTRAMTTOT + RTDCIMPAMTTOT + RTDCEXPAMTTOT + RTENMGAMTTOT + RTCCAMTTOT + NDRTOBLAMTTOT / 4 + NDRTOPTAMTTOT / 4 + NDRTOPTRAMTTOT / 4 + NDRTOBLRAMTTOT / 4) \* LRS *q***

Where:

Total Real-Time Energy Imbalance Payment (or Charge) at Settlement Point (or Hub)

RTEIAMTTOT = RTEIAMTQSETOT *q*

Total Real-Time Payment for BLT Resources

BLTRAMTTOT = BLTRAMTQSETOT *q*

Total Real-Time Payment for DC Tie Imports

RTDCIMPAMTTOT = RTDCIMPAMTQSETOT *q*

Total Real-Time Charge for DC Tie Exports (under “Oklaunion Exemption”)

RTDCEXPAMTTOT = RTDCEXPAMTQSETOT *q*

Total Real-Time Congestion Payment or Charge for Self-Schedules

RTCCAMTTOT = RTCCAMTQSETOT *q*

Total Real-Time Payment or Charge for PTP Obligations when ERCOT is unable to execute the DAM

NDRTOBLAMTTOT =  NDRTOBLAMTOTOT *o*

Total Real-Time Payment for PTP Options when ERCOT is unable to execute the DAM

NDRTOPTAMTTOT =  NDRTOPTAMTOTOT *o*

Total Real-Time Payment for PTP Options with Refund when ERCOT is unable to execute the DAM

NDRTOPTRAMTTOT = NDRTOPTRAMTOTOT *o*

Total Real-Time Payment or Charge for PTP Obligations with Refund when ERCOT is unable to execute the DAM

NDRTOBLRAMTTOT =  NDRTOBLRAMTOTOT *o*

Total Real-Time Energy Payment (or Charge) for energy from Non-Modeled Generators and DG registered with ERCOT for the purpose of Settlements

RTENMGAMTTOT = RTENMGAMT *q*

The above variables are defined as follows:

| Variable | Unit | Description |
| --- | --- | --- |
| LARTRNAMT *q* | $ | *Load-Allocated Real-Time Revenue Neutrality Amount per QSE*—The QSE *q*’s share of the total Real-Time revenue neutrality amount for the 15-minute Settlement Interval. |
| RTEIAMTTOT | $ | *Real-Time Energy Imbalance Amount Total*—The total net payments and charges for Real-Time Energy Imbalance at all Settlement Points (Resource, Load Zone, or Hub) for the 15-minute Interval. |
| BLTRAMTTOT | $ | *Block Load Transfer Resource Amount Total*⎯The total of the payments for energy delivered into the ERCOT Region through BLT points for the 15-minute Settlement Interval. |
| RTDCIMPAMTTOT | $ | *Real-Time DC Import Amount Total*—The summation of payments for DC Tie imports for the 15-minute Settlement Interval. |
| RTDCEXPAMTTOT | $ | *Real-Time DC Export Amount Total*—The summation of charges to all QSEs that are under the “Oklaunion Exemption” for DC Tie exports for the 15-minute Settlement Interval. |
| RTCCAMTTOT | $ | *Real-Time Energy Congestion Cost Amount Total*—The total net congestion payments and charges for all Self-Schedules for the 15-minute Settlement Interval. |
| NDRTOBLAMTTOT | $ | *No DAM Real-Time Obligation Amount Total*—The sum of all payments and charges for PTP Obligations settled in Real-Time, when ERCOT is unable to execute the DAM, for the hour that includes the 15-minute Settlement Interval. |
| NDRTOPTAMTTOT | $ | *No DAM Real-Time Option Amount Total*—The sum of all payments for PTP Options settled in Real-Time, when ERCOT is unable to execute the DAM, for the hour that includes the 15-minute Settlement Interval. |
| NDRTOPTRAMTTOT | $ | *No DAM Real-Time Option with Refund Amount Total*—The sum of all payments for PTP Options with Refund settled in Real-Time, when ERCOT is unable to execute the DAM, for the hour that includes the 15-minute Settlement Interval. |
| NDRTOBLRAMTTOT | $ | *No DAM Real-Time Obligation with Refund Amount Total*— The sum of all payments for PTP Obligations with Refund settled in Real-Time, when ERCOT is unable to execute the DAM, for the hour that includes the 15-minute Settlement Interval. |
| RTEIAMTQSETOT *q* | $ | *Real-Time Energy Imbalance Amount QSE Total per QSE*⎯The total net payments and charges to QSE *q* for Real-Time Energy Imbalance Service at all Resource Node Settlement Points for the 15-minute Settlement Interval. |
| RTCCAMTQSETOT *q* | $ | *Real-Time Congestion Cost Amount QSE Total per QSE*⎯The total net congestion payments and charges to QSE *q* for its Self-Schedules for the 15-minute Settlement Interval. |
| BLTRAMTQSETOT *q* | $ | *Block Load Transfer Resource Amount QSE Total per QSE*⎯The total of the payments to QSE *q* for energy delivered into the ERCOT Region through BLT points for the 15-minute Settlement Interval. |
| RTDCIMPAMTQSETOT *q* | $ | *Real-Time DC Import Amount QSE Total per QSE*⎯The total of the payments to QSE *q* for energy imported into the ERCOT Region through DC Ties for the 15-minute Settlement Interval. |
| RTDCEXPAMTQSETOT *q* | $ | *Real-Time DC Export Amount QSE Total per QSE*⎯The total of the charges to QSE *q* for energy exported from the ERCOT Region through DC Ties for the 15-minute Settlement Interval. |
| NDRTOBLAMTOTOT *o* | $ | *No DAM Real-Time Obligation Amount Owner Total per CRR Owner*—The net total payment or charge to CRR owner *o* of all its PTP Obligations settled in Real-Time when ERCOT is unable to execute the DAM, for the hour. |
| NDRTOPTAMTOTOT *o* | $ | *No DAM Real-Time Option Amount Owner Total per CRR Owner*—The total payment to CRR owner *o* for all its PTP Options settled in Real-Time when ERCOT is unable to execute the DAM, for the hour. |
| NDRTOPTRAMTOTOT *o* | $ | *No DAM Real-Time Option with Refund Amount Owner Total per CRR Owner*—The total payment to NOIE CRR owner *o* for all its PTP Options with Refund settled in Real-Time when ERCOT is unable to execute the DAM, for the hour. |
| NDRTOBLRAMTOTOT *o* | $ | *No DAM Real-Time Obligation with Refund Amount Owner Total per CRR Owner*—The net total payment or charge to CRR owner *o* for all its PTP Obligations with Refund settled in Real-Time, when ERCOT is unable to execute the DAM, for the hour. |
| RTENMGAMT *q* | $ | *Real-Time Energy Payment or Charge per QSE for Energy from Non-Modeled Generators and Distributed Generation* —The payment or charge to QSE *q* for Real-Time Energy from energy from Non-Modeled Generators and DG registered with ERCOT for the purpose of Settlements for the 15-minute Settlement Interval. |
| RTENMGAMTTOT | $ | *Real-Time Energy Amount Total for Energy from all Non-Modeled Generators and Distributed Generation* —The total net payments and charges to all QSEs for Real-Time Energy from Non-Modeled Generators and DG registered with ERCOT for the purpose of Settlements 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. |
| *o* | none | A CRR Owner. |

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;

|  |
| --- |
| ***[NPRR664: Insert items (n) and (o) below upon system implementation and renumber accordingly:]***  (n) Section 6.6.3.7, Real-Time Make-Whole Payment for Exceptional Fuel Cost;  (o) Section 6.6.3.8, Real-Time Make-Whole Charge for Exceptional Fuel Cost; |

(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;

(p) Section 6.6.3.9, Real-Time Payment or Charge for Energy from Non-Modeled Generators and Distributed Generation Registered with ERCOT;

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

(r) Section 6.6.5.1.1.1, Base Point Deviation Charge for Over Generation;

(s) Section 6.6.5.1.1.2, Base Point Deviation Charge for Under Generation;

(t) Section 6.6.5.2, IRR Generation Resource Base Point Deviation Charge;

(u) Section 6.6.5.4, Base Point Deviation Payment;

(v) Section 6.6.6.1, RMR Standby Payment;

(w) Section 6.6.6.2, RMR Payment for Energy;

(x) Section 6.6.6.3, RMR Adjustment Charge;

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

(z) Section 6.6.6.5, RMR Service Charge;

(aa) Paragraph (2) of Section 6.6.7.1, Voltage Support Service Payments;

(bb) Paragraph (4) of Section 6.6.7.1;

(cc) Section 6.6.7.2, Voltage Support Charge;

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

(ee) Section 6.6.8.2, Black Start Capacity Charge;

(ff) Section 6.6.9.1, Payment for Emergency Power Increase Directed by ERCOT;

(gg) Section 6.6.9.2, Charge for Emergency Power Increases;

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

(ii) Paragraph (1)(a) of Section 6.7.1, Payments for Ancillary Service Capacity Sold in a Supplemental Ancillary Services Market (SASM) or Reconfiguration Supplemental Ancillary Services Market (RSASM);

(jj) Paragraph (1)(b) of Section 6.7.1;

(kk) Paragraph (1)(c) of Section 6.7.1;

(ll) Paragraph (1)(d) of Section 6.7.1;

(mm) Paragraph (1)(a) of Section 6.7.2, Payments for Ancillary Service Capacity Assigned in Real-Time Operations;

(nn) Paragraph (1)(b) of Section 6.7.2;

(oo) Paragraph (1)(a) of Section 6.7.2.1, Charges for Infeasible Ancillary Service Capacity Due to Transmission Constraints;

(pp) Paragraph (1)(b) of Section 6.7.2.1;

(qq) Paragraph (1)(c) of Section 6.7.2.1;

(rr) Paragraph (1)(d) of Section 6.7.2.1;

|  |
| --- |
| ***[NPRR841: Insert item (ss) below upon system implementation and renumber accordingly:]***  (ss) Paragraph (3) of Section 6.7.2.2, Real-Time Adjustments to Day-Ahead Make-Whole Payments due to Ancillary Services Infeasibility Charges; |

(ss) Paragraph (1)(a) of Section 6.7.3, Charges for Ancillary Service Capacity Replaced Due to Failure to Provide;

(tt) Paragraph (1)(b) of Section 6.7.3;

(uu) Paragraph (1)(c) of Section 6.7.3;

(vv) Paragraph (1)(d) of Section 6.7.3;

(ww) Paragraph (2) of Section 6.7.4, Adjustments to Cost Allocations for Ancillary Services Procurement;

(xx) Paragraph (3) of Section 6.7.4;

(yy) Paragraph (4) of Section 6.7.4;

(zz) Paragraph (5) of Section 6.7.4;

(aaa) Paragraph (7) of Section 6.7.5, Real-Time Ancillary Service Imbalance Payment or Charge (Real-Time Ancillary Service Imbalance Amount);

(bbb) Paragraph (7) of Section 6.7.5, (Real-Time Reliability Deployment Ancillary Service Imbalance Amount);

(ccc) Paragraph (8) of Section 6.7.5, (Real-Time RUC Ancillary Service Reserve Amount);

(ddd) Paragraph (8) of Section 6.7.5, (Real-Time Reliability Deployment RUC Ancillary Service Reserve Amount);

(eee) Section 6.7.6, Real Time Ancillary Service Imbalance Revenue Neutrality Allocation (Load-Allocated Ancillary Service Imbalance Revenue Neutrality Amount);

(fff) Section 6.7.6, (Load-Allocated Reliability Deployment Ancillary Service Imbalance Revenue Neutrality Amount);

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

(hhh) 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.

***9.19.1 Default Uplift Invoices***

(1) ERCOT shall collect the total short-pay amount for all Settlement Invoices for a month, less the total payments expected from a payment plan, from Qualified Scheduling Entities (QSEs) and CRR Account Holders. ERCOT must pay the funds it collects from payments on Default Uplift Invoices to the Entities previously short-paid. ERCOT shall notify those Entities of the details of the payment.

(2) Each Counter-Party’s share of the uplift is calculated using True-Up Settlement data for each Operating Day in the month prior to the month in which the default occurred, and is calculated as follows:

**DURSCP*cp* = TSPA \* MMARS*cp***

Where:

MMARS *cp* = MMA *cp* / MMATOT

MMA *cp* = Max {∑*mp* (URTMG *mp*+ URTDCIMP *mp*),

∑*mp* (URTAML *mp* + UWSLTOT *mp*),

∑*mp*URTQQES *mp*,

∑*mp* URTQQEP *mp*,

∑*mp* UDAES *mp*,

∑*mp* UDAEP *mp*,

∑*mp* (URTOBL *mp +* URTOBLLO *mp*),

∑*mp* (UDAOPT *mp*+ UDAOBL *mp*+UOPTS *mp*+UOBLS *mp*),

∑*mp* (UOPTP *mp*+ UOBLP *mp*),

∑*mp* (UNMGTOT)}

MMATOT = ∑*cp* (MMA*cp*)

Where:

**URTMG *mp* = ∑*p, r, i* (RTMG *mp, p, r, i*), excluding RTMG for RMR Resources and RTMG in Reliability Unit Commitment (RUC)-Committed Intervals for RUC-committed Resources**

URTDCIMP *mp* = ∑*p, i* (RTDCIMP *mp, p, i*) / 4

URTAML *mp* = max(0,∑*p, i* (RTAML *mp, p, i*))

URTQQES *mp* = ∑*p, i* (RTQQES *mp, p, i*) / 4

URTQQEP *mp* = ∑*p, i* (RTQQEP *mp, p, i*) / 4

UDAES *mp* = ∑*p, h* (DAES *mp, p, h*)

UDAEP *mp* = ∑*p, h* (DAEP *mp, p, h*)

URTOBL mp = ∑*(j, k), h* (RTOBL*mp, (j, k), h*)

URTOBLLO *mp* = ∑*(j, k), h* (RTOBLLO*mp, (j, k), h*)

UDAOPT mp = ∑*(j, k), h* (DAOPT*mp, (j, k), h*)

UDAOBL mp = ∑*(j, k), h* (DAOBL*mp, (j, k), h*)

UOPTS mp = ∑*(j, k), h* (OPTS*mp, (j, k), h*)

UOBLS mp = ∑*(j, k), h* (OBLS*mp, (j, k), h*)

UOPTP mp = ∑*(j, k), h* (OPTP*mp, j, h*)

UOBLP *mp* = ∑*(j, k), h* (OBLP*mp, (j, k), h*)

UWSLTOT *mp* = (-1) \* ∑*r, b* (MEBL *mp, r, b*)

UNMGTOT *mp* = ∑*gsc,b* ()

The above variables are defined as follows:

| Variable | Unit | Definition |
| --- | --- | --- |
| DURSCP *cp* | $ | *Default Uplift Ratio Share per Counter-Party*—The Counter-Party’s pro rata portion of the total short-pay amount for all Day-Ahead Market (DAM) and Real-Time Market (RTM) Invoices for a month. |
| TSPA | $ | *Total Short Pay Amount*—The total short-pay amount calculated by ERCOT to be collected through the Default Uplift Invoice process. |
| MMARS *cp* | None | *Maximum MWh Activity Ratio Share*—The Counter-Party’s pro rata share of Maximum MWh Activity. |
| MMA *cp* | MWh | *Maximum MWh Activity*—The maximum MWh activity of all Market Participants represented by the Counter-Party in the DAM, RTM and CRR Auction for a month. |
| MMATOT | MWh | *Maximum MWh Activity Total*—The sum of all Counter-Party’s Maximum MWh Activity. |
| RTMG *mp, p, r, i* | MWh | *Real-Time Metered Generation per Market Participant per Settlement Point per Resource*—The Real-Time energy produced by the Generation Resource *r* represented by Market Participant *mp*, at Resource Node *p*, for the 15-minute Settlement Interval *i*, where the Market Participant is a QSE. |
| URTMG *mp* | MWh | *Uplift Real-Time Metered Generation per Market Participant*—The monthly sum of Real-Time energy produced by Generation Resources represented by Market Participant *mp*, excluding generation for RMR Resources and generation in RUC-Committed Intervals, where the Market Participant is a QSE assigned to the registered Counter-Party. |
| RTDCIMP *mp, p, i* | MW | *Real-Time DC Import per QSE per Settlement Point*—The aggregated Direct Current Tie (DC Tie) Schedule submitted by Market Participant *mp,* as an importer into the ERCOT System through DC Tie *p*, for the 15-minute Settlement Interval *i*, where the Market Participant is a QSE. |
| URTDCIMP *mp* | MW | *Uplift Real-Time DC Import per Market Participant*—The monthly sum of the aggregated DC Tie Schedule submitted by Market Participant *mp*, as an importer into the ERCOT System where the Market Participant is a QSE assigned to a registered Counter-Party. |
| RTAML *mp, p, i* | MWh | *Real-Time Adjusted Metered Load per Market Participant per Settlement Point*—The sum of the Adjusted Metered Load (AML) at the Electrical Buses that are included in Settlement Point *p* represented by Market Participant *mp* for the 15-minute Settlement Interval *i*, where the Market Participant is a QSE. |
| URTAML *mp* | MWh | *Uplift Real-Time Adjusted Metered Load per Market Participant*—The monthly sum of the AML represented by Market Participant *mp*, where the Market Participant is a QSE assigned to the registered Counter-Party. |
| RTQQES *mp, p, i* | MW | *QSE-to-QSE Energy Sale per Market Participant per Settlement Point*—The amount of MW sold by Market Participant *mp* through Energy Trades at Settlement Point *p* for the 15-minute Settlement Interval *i*, where the Market Participant is a QSE. |
| URTQQES *mp* | MWh | *Uplift QSE-to-QSE Energy Sale per Market Participant*—The monthly sum of MW sold by Market Participant *mp* through Energy Trades, where the Market Participant is a QSE assigned to the registered Counter-Party. |
| RTQQEP *mp, p, i* | MW | *QSE-to-QSE Energy Purchase per Market Participant per Settlement Point*—The amount of MW bought by Market Participant *mp* through Energy Trades at Settlement Point *p* for the 15-minute Settlement Interval *i*, where the Market Participant is a QSE. |
| URTQQEP *mp* | MWh | *Uplift QSE-to-QSE Energy Purchase per Market Participant*—The monthly sum of MW bought by Market Participant *mp* through Energy Trades, where the Market Participant is a QSE assigned to the registered Counter-Party. |
| DAES *mp, p, h* | MW | *Day-Ahead Energy Sale per Market Participant per Settlement Point per hour*—The total amount of energy represented by Market Participant *mp*’s cleared Three-Part Supply Offers in the DAM and cleared DAM Energy-Only Offers at Settlement Point *p*, for the hour *h*, where the Market Participant is a QSE. |
| UDAES *mp* | MWh | *Uplift Day-Ahead Energy Sale per Market Participant*—The monthly total of energy represented by Market Participant *mp*’s cleared Three-Part Supply Offers in the DAM and cleared DAM Energy-Only Offer Curves, where the Market Participant is a QSE assigned to the registered Counter-Party. |
| DAEP *mp, p, h* | MW | *Day-Ahead Energy Purchase per Market Participant per Settlement Point per hour*—The total amount of energy represented by Market Participant *mp*’s cleared DAM Energy Bids at Settlement Point *p* for the hour *h*, where the Market Participant is a QSE. |
| UDAEP *mp* | MWh | *Uplift Day-Ahead Energy Purchase per Market Participant*—The monthly total of energy represented by Market Participant *mp*’s cleared DAM Energy Bids, where the Market Participant is a QSE assigned to the registered Counter-Party. |
| RTOBL *mp, (j, k), h* | MW | *Real-Time Obligation per Market Participant per source and sink pair per hour*—The number of Market Participant *mp*’s Point-to-Point (PTP) Obligations with the source *j* and the sink *k* settled in Real-Time for the hour *h*, and where the Market Participant is a QSE. |
| URTOBL *mp* | MWh | *Uplift Real-Time Obligation per Market Participant*—The monthly total of Market Participant *mp*’s PTP Obligations settled in Real-Time, counting the quantity only once per source and sink pair, and where the Market Participant is a QSE assigned to the registered Counter-Party. |
| RTOBLLO *q, (j, k)* | MW | *Real-Time Obligation with Links to an Option per QSE per pair of source and sink*⎯The total MW of the QSE’s PTP Obligation with Links to an Option Bids cleared in the DAM and settled in Real-Time for the source *j* and the sink *k* for the hour. |
| URTOBLLO *q, (j, k)* | MW | *Uplift Real-Time Obligation with Links to an Option per QSE per pair of source and sink*⎯The monthly total of Market Participant *mp*’s MW of PTP Obligation with Links to Options Bids cleared in the DAM and settled in Real-Time for the source *j* and the sink *k* for the hour, where the Market Participant is a QSE assigned to the registered Counter-Party. |
| DAOPT *mp, (j, k), h* | MW | *Day-Ahead Option per Market Participant per source and sink pair per hour*⎯The number of Market Participant *mp*’s PTP Options with the source *j* and the sink *k* owned in the DAM for the hour *h*, and where the Market Participant is a CRR Account Holder. |
| UDAOPT *mp* | MWh | *Uplift Day-Ahead Option per Market Participant*⎯The monthly total of Market Participant *mp*’s PTP Options owned in the DAM, counting the ownership quantity only once per source and sink pair, and where the Market Participant is a CRR Account Holder assigned to the registered Counter-Party. |
| DAOBL *mp, (j, k), h* | MW | *Day-Ahead Obligation per Market Participant per source and sink pair per hour*—The number of Market Participant *mp*’s PTP Obligations with the source *j* and the sink *k* owned in the DAM for the hour *h*, and where the Market Participant is a CRR Account Holder. |
| UDAOBL *mp* | MWh | *Uplift Day-Ahead Obligation per Market Participant*⎯The monthly total of Market Participant *mp*’s PTP Obligations owned in the DAM, counting the ownership quantity only once per source and sink pair, where the Market Participant is a CRR Account Holder assigned to the registered Counter-Party. |
| OPTS *mp, (j, k), a, h* | MW | *PTP Option Sale per Market Participant per source and sink pair per CRR Auction per hour*—The MW quantity that represents the total of Market Participant *mp*’s PTP Option offers with the source *j* and the sink *k* awarded in CRR Auction *a*, for the hour *h*, where the Market Participant is a CRR Account Holder. |
| UOPTS *mp* | MWh | *Uplift PTP Option Sale per Market Participant*—The MW quantity that represents the monthly total of Market Participant *mp*’s PTP Option offers awarded in CRR Auctions, counting the awarded quantity only once per source and sink pair, where the Market Participant is a CRR Account Holder assigned to the registered Counter-Party. |
| OBLS *mp, (j, k), a, h* | MW | *PTP Obligation Sale per Market Participant per source and sink pair per CRR Auction per hour*—The MW quantity that represents the total of Market Participant *mp*’s PTP Obligation offers with the source *j* and the sink *k* awarded in CRR Auction *a*, for the hour *h*, where the Market Participant is a CRR Account Holder. |
| UOBLS *mp* | MWh | *Uplift PTP Obligation Sale per Market Participant*—The MW quantity that represents the monthly total of Market Participant *mp*’s PTP Obligation offers awarded in CRR Auctions, counting the quantity only once per source and sink pair, where the Market Participant is a CRR Account Holder assigned to the registered Counter-Party. |
| OPTP *mp, (j, k), a, h* | MW | *PTP Option Purchase per Market Participant per source and sink pair per CRR Auction per hour*—The MW quantity that represents the total of Market Participant *mp*’s PTP Option bids with the source *j* and the sink *k* awarded in CRR Auction *a*, for the hour *h*, where the Market Participant is a CRR Account Holder. |
| UOPTP *mp* | MWh | *Uplift PTP Option Purchase per Market Participant*—The MW quantity that represents the monthly total of Market Participant *mp*’s PTP Option bids awarded in CRR Auctions, counting the quantity only once per source and sink pair, where the Market Participant is a CRR Account Holder assigned to the registered Counter-Party. |
| OBLP *mp, (j, k), a, h* | MW | *PTP Obligation Purchase per Market Participant per source and sink pair per CRR Auction per hour*—The MW quantity that represents the total of Market Participant *mp*’s PTP Obligation bids with the source *j* and the sink *k* awarded in CRR Auction *a*, for the hour *h*, where the Market Participant is a CRR Account Holder. |
| UOBLP *mp* | MWh | *Uplift PTP Obligation Purchase per Market Participant*—The MW quantity that represents the monthly total of Market Participant *mp*’s PTP Obligation bids awarded in CRR Auctions, counting the quantity only once per source and sink pair, where the Market Participant is a CRR Account Holder assigned to the registered Counter-Party. |
| UWSLTOT *mp* | MWh | *Uplift Metered Energy for Wholesale Storage Load at bus per Market Participant*⎯The monthly sum of Market Participant *mp*’s Wholesale Storage Load (WSL) energy metered by the Settlement Meter which measures WSL. |
| MEBL *mp, r, b* | MWh | *Metered Energy for Wholesale Storage Load at bus*⎯The WSL energy metered by the Settlement Meter which measures WSL for the 15-minute Settlement Interval represented as a negative value, for the Market Participant *mp*, Resource *r*, at bus *b*. |
| UNMGTOT *mp* | MWh | *Uplift Real-Time Non-Modeled Generator Site per Market Participant*—The monthly sum of Real-Time energy produced by Non-Modeled Generators and DG registered with ERCOT represented by Market Participant *mp*, where the Market Participant is a QSE assigned to the registered Counter-Party. |
| MEBNMG *gsc, b* | MWh | *Metered Energy for a Non-Modeled Generator Site* ⎯The metered energy by the Settlement Meter at Electrical Bus *b* for Non-Modeled Generator site *gsc*. |
| OFNMG *gsc, b* | MWh | *Outflow as measured for a Non-Modeled Generator Site or Distributed Generation* ⎯The outflow as measured by the Settlement Meter(s) at Electrical Bus *b* for Non-Modeled Generator site *gsc* or DG registered with ERCOT. |
| *cp* | none | A registered Counter-Party. |
| *mp* | none | A Market Participant that is a non-defaulting QSE or CRR Account Holder. |
| *j* | none | A source Settlement Point. |
| *k* | none | A sink Settlement Point. |
| *a* | none | A CRR Auction. |
| *p* | none | A Settlement Point. |
| *i* | none | A 15-minute Settlement Interval. |
| *h* | none | The hour that includes the Settlement Interval i. |
| *r* | none | A Resource. |
| *gsc* | none | A generation site code. |
| *b* | none | An Electrical Bus. |

(3) The uplifted short-paid amount will be allocated to the Market Participants (QSEs or CRR Account Holders) assigned to a registered Counter-Party based on the pro-rata share of MWhs that the QSE or CRR Account Holder contributed to its Counter-Party’s maximum MWh activity ratio share.

(4) Any uplifted short-paid amount greater than $2,500,000 must be scheduled so that no amount greater than $2,500,000 is charged on each set of Default Uplift Invoices until ERCOT uplifts the total short-paid amount. ERCOT must issue Default Uplift Invoices at least 30 days apart from each other.

(5) ERCOT shall issue Default Uplift Invoices no earlier than 180 days following a short-pay of a Settlement Invoice on the date specified in the Settlement Calendar. The Invoice Recipient is responsible for accessing the Invoice on the MIS Certified Area once posted by ERCOT.

(6) Each Default Uplift Invoice must contain:

(a) The Invoice Recipient’s name;

(b) The ERCOT identifier (Settlement identification number issued by ERCOT);

(c) Net Amount Due or Payable – the aggregate summary of all charges owed by a Default Uplift Invoice Recipient;

(d) Run Date – the date on which ERCOT created and published the Default Uplift Invoice;

(e) Invoice Reference Number – a unique number generated by the ERCOT applications for payment tracking purposes;

(f) Default Uplift Invoice Reference – an identification code used to reference the amount uplifted;

(g) Payment Date and Time – the date and time that Default Uplift Invoice amounts must be paid;

(h) Remittance Information Details – details including the account number, bank name, and electronic transfer instructions of the ERCOT account to which any amounts owed by the Invoice Recipient are to be paid or of the Invoice Recipient’s account from which ERCOT may draw payments due; and

(i) Overdue Terms – the terms that would apply if the Market Participant makes a late payment.

(7) Each Invoice Recipient shall pay any net debit shown on the Default Uplift Invoice on the payment due date whether or not there is any Settlement and billing dispute regarding the amount of the debit.

***16.11.4.3.2 Real-Time Liability Estimate***

(1) ERCOT shall estimate RTL for an Operating Day as the sum of estimates for the following RTM Settlement charges and payments:

(a) Section 6.6.3.1, Real-Time Energy Imbalance Payment or Charge at a Resource Node, using Real-Time Metered Generation (RTMG) as generation estimate;

(b) Section 6.6.3.2, Real-Time Energy Imbalance Payment or Charge at a Load Zone, using 14 day or seven day old LRS for Load estimate and Real-Time Payment or Charge for Energy from Non-Modeled Generators and DG registered with ERCOT as the generation estimate;

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| [NPRR829: Replace item (b) above with the following upon system implementation:]  (b) Section 6.6.3.2, Real-Time Energy Imbalance Payment or Charge at a Load Zone, using 14 day or seven day old LRS for Load estimate and Real-Time Payment or Charge for Energy from Non-Modeled Generators and DG registered with ERCOT as the generation estimate; |

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

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

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

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

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