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| NPRR Number | [1146](https://www.ercot.com/mktrules/issues/NPRR1146) | NPRR Title | Credit Changes to Appropriately Reflect TAO Exposure |
| Date Posted | | August 10, 2022 | |
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| Requested Resolution | | Normal | |
| Nodal Protocol Sections Requiring Revision | | 16.11.4.1, Determination of Total Potential Exposure for a Counter-Party  16.11.4.2, Determination of Counter-Party Initial Estimated Liability  16.11.4.3, Determination of Counter-Party Estimated Aggregate Liability | |
| Related Documents Requiring Revision/Related Revision Requests | | None | |
| Revision Description | | The Nodal Protocol Revision Request (NPRR) makes changes to credit provisions related to Trading Activity Only (TAO) Qualified Scheduling Entities (QSEs) that appropriately reflect their credit exposure. Specific changes include:   * Eliminating the Unbilled Real-Time Amount (URTA) for TAO QSEs; * Allowing TAO QSEs to request an M1 of about two days by agreeing to certain conditions including suspending Real-Time Market activities upon ERCOT notice (Day-Ahead Market activity is systematically restricted to Available Credit Limit); * Clarifying that a TAO QSE is a QSE that does not represent either LSEs or Resource Entities, thus ensuring that a QSE engaging exclusively in DC Tie exports and other trading activities will be classified as a TAO QSE; and * Determining Counter-Party’s Total Potential Exposure (TPE) by adding the separate credit calculations for the Counter-Party’s (i) QSEs that represent LSEs or Resource Entities, (ii) TAO QSEs that do not represent LSEs or Resource Entities, and (iii) CRR Account Holders. | |
| Reason for Revision | | Addresses current operational issues.  Meets Strategic goals (tied to the [ERCOT Strategic Plan](http://www.ercot.com/content/wcm/lists/144926/ERCOT_Strategic_Plan_2019-2023.pdf) or directed by the ERCOT Board).  Market efficiencies or enhancements  Administrative  Regulatory requirements  Other: (explain)  *(please select all that apply)* | |
| Business Case | | A TOA QSE – i.e. a QSE that does not represent either a Load Serving Entity (LSE) or a Resource Entity – can quickly change market activity responding to price signals and ERCOT can relatively quickly suspend such QSE’s activity in the event of insufficient credit.  As an example, during Winter Storm Uri, QSEs that were exporting over Direct Current Ties (DC Ties) prior to the Uri were importing to the extent possible during Uri resulting in those QSEs actually being exposed to ERCOT owing them payments due for the imports rather than ERCOT being exposed. However, the current credit formulas resulted in an extremely high credit requirement based on pre-Uri activities that, absent ERCOT intervention, this would have unnecessarily resulted in those QSEs defaulting and thus depriving the ERCOT market from critical supply during a crisis. Eliminating the Unbilled Real-Time Amount (URTA) for TAO QSE addresses this issue.  Currently, DC Tie exports (treated similarly as Load for cost allocation purposes) are treated the same as Load for credit purposes. Transactions over the DC Ties are financial in nature and do not require to be served by an LSE nor a mass transition when the exporting Counter-Party is terminated. Thus, the NPRR clarifies that TAO QSE is a QSE that does not represent either LSEs or Resource Entities thus ensuring that a QSE engaging exclusively in DC Tie exports and other trading activities will be classified as a TAO QSE.  TAO QSE’s Day-Ahead Market (DAM) activity is systematically restricted to Available Credit Limit and their Real-Time Market trading activity can also be immediately suspended by the TAO QSE upon ERCOT notice since such QSEs do not represent LSEs requiring mass transition or Resource Entities. This allows for a shorter extrapolation days (M1) in credit calculations. This NPRR allows TAO QSEs to request an M1 of about 2 days by agreeing to certain conditions including suspending Real-Time Market activities upon ERCOT notice.  Finally, the slight modification to the Counter Party TPE calculation addresses the issue of a Counter-Party trading thousands of MWs in TAO QSEs but having a QSE that represents 5 MW of a client load having all its QSEs (even the substantially larger TAO QSEs) being treated as QSEs representing LSEs or Resource Entities. The more appropriate credit treatment for the Counter-Party would recognize the different exposures created by the different types of activities – this NPRR accomplishes that goal. | |

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| **Market Rules Notes** |

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

* NPRR1067, Market Entry Qualifications, Continued Participation Requirements, and Credit Risk Assessment
  + Section 16.11.4.1
  + Section 16.11.4.3

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| Proposed Protocol Language Revision |

**16.11.4.1 Determination of Total Potential Exposure for a Counter-Party**

(1) A Counter-Party’s TPE is the sum of its “Total Potential Exposure Any” (TPEA) and TPES:

(a) TPEA is the positive net exposure of the Counter-Party that may be satisfied by any forms of Financial Security defined under paragraphs (1)(a) through (1)(d) of Section 16.11.3, Alternative Means of Satisfying ERCOT Creditworthiness Requirements. TPEA will include all exposure not included in TPES.

(b) TPES is the positive net exposure of the Counter-Party that may be satisfied only by forms of Financial Security defined under paragraphs (1)(b) through (1)(d) of Section 16.11.3. The Future Credit Exposure (FCE) that reflects the future mark-to-market value for CRRs registered in the name of the Counter-Party is included in TPES.

(2) For each Counter-Party:

TPEA = Max [0, MCE, Max [0, ( EAL *q* + EAL *t* +OUT)]] + PUL

TPES = Max [0, FCE *a*] + IA

The above variables are defined as follows:

| **Variable** | **Unit** | | **Description** |
| --- | --- | --- | --- |
| EAL *q* | $ | | *Estimated Aggregate Liability for all QSEs that represent LSEs or Resource Entities*—EAL for all QSEs represented by the Counter-Party if those QSEs represent either LSEs or Resource Entities. |
| EAL *t* | $ | | *Estimated Aggregate Liability for all QSEs that do not represent either LSEs or Resource Entities*—EAL for all QSEs represented by the Counter-Party if those QSEs do not represent either LSEs or Resource Entities. |
| OUT | $ | | *Outstanding Unpaid Transactions*—Outstanding unpaid transactions for all QSEs and CRRAH represented by the Counter-Party, which include (a) outstanding Invoices to the Counter-Party; (b) estimated unbilled items to the Counter-Party, to the extent not adequately accommodated in the RTLE calculation (including resettlements and other known liabilities); and (c) estimated CRR Auction revenue available for distribution for Operating Days in the previous two months, to the extent not invoiced to the Counter-Party. Invoices will not be considered outstanding for purposes of this calculation the Business Day after that Invoice payment is received.  OUT = OIA + UDAA + UFA + UTA + CARD  Where:  OIA = *Outstanding Invoice Amounts for all the QSEs and CRRAHs represented by the Counter-Party* – Sum of any outstanding Real-Time and Day-Ahead unpaid invoices issued to the Counter-Party, including but not limited to CRR Auction Revenue Distribution (CARD) Invoices, CRR Balancing Account Invoices, Default Uplift Invoices, Securitization Uplift Charge Reallocation Invoices, and other miscellaneous Invoices. Also included are the amounts or portions of Invoices due to the Counter-Party that have been short-paid as a result of a default or non-payment of Invoices due to ERCOT by another Counter-Party.  UDAA = *Unbilled Day-Ahead Amounts for all the QSEs and CRRAHs represented by the Counter-Party* – Sum of DAL for all the QSEs and CRRAHs represented by the Counter-Party for all Operating Days for which a DAM Statement is not generated.  UFA = *Unbilled Final Amounts for all the QSEs represented by the Counter-Party* – Unbilled final extrapolated days (*ufd)* multiplied by the sum of the net amount due to or from ERCOT for all QSEs represented by the Counter-Party for Operating Days for which RTM Final Statements were generated in the 21 most recent calendar days, divided by the number of Operating Days for which RTM Final Settlement Statements were generated for the Counter-Party in the 21 most recent calendar days.  UTA = *Unbilled True-Up Amounts for all the QSEs represented by the Counter-Party* – Unbilled true-up extrapolated days (*utd)* multiplied by the sum of the net amount due to or from ERCOT by the Counter-Party for all the QSEs represented by the Counter-Party for Operating Days for which RTM True-Up Statements were generated in the 21 most recent calendar days, divided by the number of Operating Days for which RTM True-Up Settlement Statements were generated for the Counter-Party in the 21 most recent calendar days.  CARD = CRR Auction Revenue Distribution for all the QSEs represented by the Counter-Party – Estimate of the Counter-Party’s unpaid allocation of CRR Auction revenues that have already been collected but have not been paid out to all QSEs represented by the Counter-Party. CRR Auction revenues that have been earned but not billed are distributed based on the following Load Ratio Shares (LRSs): (a) Zonal LRS applied to revenues from CRRs cleared and have source and sink points located within a 2003 ERCOT Congestion Management Zone (CMZ), and (b) ERCOT-wide LRS applied to all other CRR Auction revenues. The LRS will be based on the latest completed operating month for which LRS are available. |
| PUL | $ | | *Potential Uplift*—Potential uplift to the Counter-Party, to the extent and in the proportion that the Counter-Party represents Entities to which an uplift of a short payment will be made pursuant to Section 9.19, Partial Payments by Invoice Recipients. It is calculated as the sum of: (a) Amounts expected to be uplifted within one year of the date of the calculation; and (b) the lesser of: (i) 25% of amounts expected to be uplifted beyond one year of the date of the calculation; or (ii) five years’ worth of uplift charges. |
| FCE *a* | $ | | *Future Credit Exposure for all CRR Account Holders*—FCE for all CRR Account Holders represented by the Counter-Party. |
| MCE | $ | | *Minimum Current Exposure*—For each Counter-Party, ERCOT shall determine a Minimum Current Exposure (MCE) as follows:  MCE = Max[RFAF \* MAF \* Max[{**[**L *i, od, p* \* RTSPP *i, od, p*]/*n*}, {**[[[**L *i, od, p* \* *T2***-** G *i, od, p* \* (1-*NUCADJ*) \* *T3*] \* RTSPP *i, od, p*] + [RTQQNET *i, od, p*\* *T5*]]**/***n*},  {**[**G *i, od, p* \* *NUCADJ* \* *T1* \* RTSPP *i, od, p***]/**n},  {DARTNET*i, od, p* \* *T4*/*n*}],  MAF \* IMCE]  RTQQNET *i, od, p* = Max**[(**RTQQES *i, od, p, c -*RTQQEP *i, od, p, c*), *BTCF* \* (RTQQES *i, od, p, c* – RTQQEP *i, od, p, c*)] \* RTSPP *i, od, p*  DARTNET *i, od, p*  = DAM EOO Cleared *i, od, p* \* DART *i, od, p*+ DAM TPO Cleared *i, od, p* \* DART *i, od, p* + DAM PTP Cleared *i, od, p* \* DARTPTP *i, od, p*– DAM EOB Cleared *i, od, p* \* DART *i, od, p*  Where:  G *i, od, p* = *Total Metered Generation at all Resource Nodes* for the Counter-Party for interval *i* for Operating Day *od* at Settlement Point *p*  L *i, od, p* = *Total Adjusted Metered Load (AML) at all Load Zones* (excluding DC Tie exports) for the Counter-Party for interval *i* for Operating Day *od* at Settlement Point *p*  MAF = *Market Adjustment Factor*—Used to provide for the potential for overall price increases based on changes to ERCOT market rules or market conditions. This factor shall not be set below 100%. Revisions to this factor will be recommended by the Technical Advisory Committee (TAC) and the ERCOT Finance and Audit (F&A) Committee, and approved by the ERCOT Board. Such revisions shall be implemented on the 45th calendar day following ERCOT Board approval unless otherwise directed by the ERCOT Board.  *NUCADJ*= *Net Unit Contingent Adjustment*—To allow for situations where a generator may unintentionally or intentionally meet its requirement from the Real-Time Market (RTM)  RTQQNET *i, od, p* = *Net QSE-to-QSE Energy Trades* for the Counter-Party for interval *i* for Operating Day *od* at Settlement Point *p*  RTQQES *i, od, p, c* = *QSE Energy Trades* for which the Counter-Party is the seller for interval *i* for Operating Day *od* at Settlement Point *p* with Counter-Party *c*  RTQQEP *i, od, p, c* = *QSE Energy Trades* for which the Counter-Party is the buyer for interval *i* for Operating Day *od* at Settlement Point *p* with Counter-Party *c*  *BTCF* = *Bilateral Trades Credit Factor*  RTSPP *i, od, p* = *Real-Time Settlement Point Price* for interval *i* for Operating Day *od* at Settlement Point *p*  DARTNET *i, od, p* = *Net DAM activities* for the Counter-Party for interval *i* for Operating Day *od* at Settlement Point *p*  DART *i, od, p* = *Day-Ahead - Real-Time Spread* for interval *i* for Operating Day *od* at Settlement Point *p*  DAM EOB Cleared*i, od, p* = *DAM Energy Only Bids Cleared* for interval *i* for Operating Day *od* at Settlement Point *p*  DAM EOO Cleared *i, od, p* = *DAM Energy Only Offers Cleared* for interval *i* for Operating Day *od* at Settlement Point *p*  DAM TPO Cleared *i, od, p* = *DAM Three-Part Offers Cleared* for interval *i* for Operating Day *od* at Settlement Point *p*  DAM PTP Cleared *i, od, p* = *DAM Point-to-Point (PTP) Obligations Cleared* for interval *i* for Operating Day *od* at Settlement Point *p*  DARTPTP *i, od, p* = *Day-Ahead - Real-Time Spread* for value of PTP Obligation for interval *i* for Operating Day *od* at Settlement Point *p*  *c* = Bilateral Counter-Party  *e* = Most recent *n* Operating Days for which RTM Initial Settlement Statements are available  *i* = Settlement Interval  *n* = Days used for averaging  *nm =* Notional Multiplier  *od* = Operating Day  *p* = A Settlement Point |
| |  |  |  |  | | --- | --- | --- | --- | | ***[NPRR1013: Replace the variable “MCE” above with the following upon system implementation of the Real-Time Co-Optimization (RTC) project:]***   |  |  |  | | --- | --- | --- | | MCE | $ | *Minimum Current Exposure*—For each Counter-Party, ERCOT shall determine a Minimum Current Exposure (MCE) as follows:  MCE = Max[RFAF \* MAF \* Max[{**[**L *i, od, p* \* RTSPP *i, od, p*]/*n*}, {**[[[**L *i, od, p* \* *T2***-** G *i, od, p* \* (1-*NUCADJ*) \* *T3*] \* RTSPP *i, od, p*] + [RTQQNET *i, od, p*\* *T5*]]**/***n*},  {**[**G *i, od, p* \* *NUCADJ* \* *T1* \* RTSPP *i, od, p***]/**n},  {{DARTNET*i, od, p* \* *T4*/*n*} {DARTASONET *i, od, c \* T4/n*}}],  MAF \* IMCE]  RTQQNET *i, od, p* = Max**[(**RTQQES *i, od, p, c -*RTQQEP *i, od, p, c*), *BTCF* \* (RTQQES *i, od, p, c* – RTQQEP *i, od, p, c*)] \* RTSPP *i, od, p*  DARTNET *i, od, p*  = DAM EOO Cleared *i, od, p* \* DART *i, od, p*+ DAM TPO Cleared *i, od, p* \* DART *i, od, p* + DAM PTP Cleared *i, od, p* \* DARTPTP *i, od, p*– DAM EOB Cleared *i, od, p* \* DART *i, od, p*  DARTASONET *i, od* = DAM ASOO Cleared *i, od* \* DARTMCPC *i, od*  Where:  G *i, od, p* = *Total Metered Generation at all Resource Nodes* for the Counter-Party for interval *i* for Operating Day *od* at Settlement Point *p*  L *i, od, p* = *Total Adjusted Metered Load (AML) at all Load Zones* for the Counter-Party for interval *i* for Operating Day *od* at Settlement Point *p*  MAF = *Market Adjustment Factor*—Used to provide for the potential for overall price increases based on changes to ERCOT market rules or market conditions. This factor shall not be set below 100%. Revisions to this factor will be recommended by the Technical Advisory Committee (TAC) and the ERCOT Finance and Audit (F&A) Committee, and approved by the ERCOT Board. Such revisions shall be implemented on the 45th calendar day following ERCOT Board approval unless otherwise directed by the ERCOT Board.  *NUCADJ*= *Net Unit Contingent Adjustment*—To allow for situations where a generator may unintentionally or intentionally meet its requirement from the Real-Time Market (RTM)  RTQQNET *i, od, p* = *Net QSE-to-QSE Energy Trades* for the Counter-Party for interval *i* for Operating Day *od* at Settlement Point *p*  RTQQES *i, od, p, c* = *QSE Energy Trades* for which the Counter-Party is the seller for interval *i* for Operating Day *od* at Settlement Point *p* with Counter-Party *c*  RTQQEP *i, od, p, c* = *QSE Energy Trades* for which the Counter-Party is the buyer for interval *i* for Operating Day *od* at Settlement Point *p* with Counter-Party *c*  DARTASONET *i, od* = *Net DAM Ancillary Service Only activities* for interval *i* for Operating Day *od*  DAM ASOO Cleared *i, od* = DAM Ancillary Service Only Offers Cleared in DAM for interval *i* for Operating Day *od*  DARTMCPC *i, od* = Day-Ahead – Real-Time MCPC Spread for interval *i* for Operating Day *od*  *BTCF* = *Bilateral Trades Credit Factor*  RTSPP *i, od, p* = *Real-Time Settlement Point Price* for interval *i* for Operating Day *od* at Settlement Point *p*  DARTNET *i, od, p* = *Net DAM activities* for the Counter-Party for interval *i* for Operating Day *od* at Settlement Point *p*  DART *i, od, p* = *Day-Ahead - Real-Time Spread* for interval *i* for Operating Day *od* at Settlement Point *p*  DAM EOB Cleared*i, od, p* = *DAM Energy Only Bids Cleared* for interval *i* for Operating Day *od* at Settlement Point *p*  DAM EOO Cleared *i, od, p* = *DAM Energy Only Offers Cleared* for interval *i* for Operating Day *od* at Settlement Point *p*  DAM TPO Cleared *i, od, p* = *DAM Three-Part Offers Cleared* for interval *i* for Operating Day *od* at Settlement Point *p*  DAM PTP Cleared *i, od, p* = *DAM Point-to-Point (PTP) Obligations Cleared* for interval *i* for Operating Day *od* at Settlement Point *p*  DARTPTP *i, od, p* = *Day-Ahead - Real-Time Spread* for value of PTP Obligation for interval *i* for Operating Day *od* at Settlement Point *p*  *c* = Bilateral Counter-Party  *cif = Cap Interval Factor* - Represents the historic largest percentage of System-Wide Offer Cap (SWCAP) intervals during a calendar day  *e* = Most recent *n* Operating Days for which RTM Initial Settlement Statements are available  *i* = Settlement Interval  *n* = Days used for averaging  *nm =* Notional Multiplier  *od* = Operating Day  *p* = A Settlement Point | | | | | |
| IMCE | $ | | *Initial Minimum Current Exposure*  IMCE = TOA \* (SWCAP \* *nm* \* *cif*)  Where:  *cif = Cap Interval Factor* - Represents the historic largest percentage of System-Wide Offer Cap (SWCAP) intervals during a calendar day |
| *q* | None | | QSEs represented by Counter-Party. |
| *a* | None | | CRR Account Holders represented by Counter-Party. |
| IA | $ | | *Independent Amount*—The amount required to be posted as defined in Section 16.16.1, Counter-Party Criteria. |
| RFAF | None | | *Real-Time Forward Adjustment Factor*—The adjustment factor for RTM-related forward exposure as defined in Section 16.11.4.3.3, Forward Adjustment Factors. |

The above parameters are defined as follows:

| **Parameter** | **Unit** | **Current Value\*** |
| --- | --- | --- |
| *nm* | None | 50 |
| *cif* | Percentage | 9% |
| *NUCADJ* | Percentage | Minimum value of 20%. |
| *T1* | Days | 2 |
| *T2* | Days | 5 |
| *T3* | Days | 5 |
| *T4* | Days | 1 |
| *T5* | Days | For a Counter-Party that represents Load this value is equal to 5, otherwise this value is equal to 2. |
| *BTCF* | Percentage | 80% |
| *n* | Days | 14 |
| \* The current value for the parameters referenced in this table above will be recommended by TAC and approved by the ERCOT Board. ERCOT shall update parameter values on the first day of the month following ERCOT Board approval unless otherwise directed by the ERCOT Board. ERCOT shall provide a Market Notice prior to implementation of a revised parameter value. | | |

(3) If ERCOT, in its sole discretion, determines that the TPEA or the TPES for a Counter-Party calculated under paragraphs (1) or (2) above does not adequately match the financial risk created by that Counter-Party’s activities under these Protocols, then ERCOT may set a different TPEA or TPES for that Counter-Party. ERCOT shall, to the extent practical, give to the Counter-Party the information used to determine that different TPEA or TPES. ERCOT shall provide written or electronic Notice to the Counter-Party of the basis for ERCOT’s assessment of the Counter-Party’s financial risk and the resulting creditworthiness requirements.

(4) ERCOT shall monitor and calculate each Counter-Party’s TPEA and TPES daily.

**16.11.4.2 Determination of Counter-Party Initial Estimated Liability**

(1) For each Counter-Party, except those Counter-Parties that are only CRR Account Holders, ERCOT shall determine an Initial Estimated Liability (IEL) for purposes of Section 16.11.3, Alternative Means of Satisfying ERCOT Creditworthiness Requirements.

(2) For a Counter-Party that has all its QSEs representing only LSEs, ERCOT shall calculate the IEL using the following formula:

**IEL = DEL \* Max [0.2, RTEFL] \* RTAEP \* (M1 + M2)**

The above variables are defined as follows:

|  |  |  |
| --- | --- | --- |
| **Variable** | **Unit** | **Description** |
| IEL | $ | *Initial Estimated Liability*⎯The Counter-Party’s Initial Estimated Liability. |
| DEL | MWh | *Daily Estimated Load*⎯The Counter-Party’s estimated average daily Load as determined by ERCOT based on information provided by the Counter-Party. |
| RTEFL | none | *Real-Time Energy Factor for Load*⎯The ratio of the Counter-Party’s estimated energy purchases in the RTM as determined by ERCOT based on information provided by the Counter-Party, to the Counter-Party’s Daily Estimated Load. |
| RTAEP | $/MWh | *Real-Time Average Energy Price*⎯Average Settlement Point Price for the “ERCOT 345” as defined in Section 3.5.2.5, ERCOT Hub Average 345 kV Hub (ERCOT 345), based upon the previous seven days’ average Real-Time Settlement Point Prices. |

(3) For a Counter-Party that has all its QSEs representing only Resource Entities, ERCOT shall calculate the IEL using the following formula:

**IEL = DEG \* Max [0.2, RTEFG] \* RTAEP \* (M1 + M2)**

The above variables are defined as follows:

| **Variable** | **Unit** | **Description** |
| --- | --- | --- |
| IEL | $ | *Initial Estimated Liability*⎯The Counter-Party’s Initial Estimated Liability. |
| DEG | MWh | *Daily Estimated Generation*⎯The Counter-Party’s estimated average daily generation as determined by ERCOT based on information provided by the Counter-Party. |
| RTEFG | none | *Real-Time Energy Factor for Generation*⎯The ratio of the Counter-Party’s QSE to QSE estimated energy sales as determined by ERCOT based on information provided by the Counter-Party, to the Counter-Party’s Daily Estimated Generation. |
| RTAEP | $/MWh | *Real-Time Average Energy Price*⎯Average Settlement Point Price for the “ERCOT 345” as defined in Section 3.5.2.5 based upon the previous seven days average Real-Time Settlement Point Prices. |

(4) For a Counter-Party that has QSEs representing both LSEs and Resource Entities, ERCOT shall calculate the Counter-Party’s IEL using the following formula:

**IEL = DEL \* Max [0.1, RTEFL] \* RTAEP** \* **(M1 + M2) + DEG \* Max [0.1, RTEFG] \* RTAEP \* (M1 + M2)**

The above variables are defined as follows:

| **Variable** | **Unit** | **Description** |
| --- | --- | --- |
| IEL | $ | *Initial Estimated Liability*⎯The Counter-Party’s Initial Estimated Liability. |
| DEL | MWh | *Daily Estimated Load*⎯The Counter-Party’s estimated average daily Load as determined by ERCOT based on information provided by the Counter-Party. |
| DEG | MWh | *Daily Estimated Generation*⎯The Counter-Party’s estimated average daily generation as determined by ERCOT based on information provided by the Counter-Party. |
| RTEFL | none | *Real-Time Energy Factor for Load*⎯The ratio of the Counter-Party’s estimated energy purchases in the RTM as determined by ERCOT based on information provided by the Counter-Party, to the Counter-Party’s Daily Estimated Load. |
| RTAEP | $/MWh | *Real-Time Average Energy Price*⎯Average Settlement Point Price for the “ERCOT 345” as defined in Section 3.5.2.5 based upon the previous seven days’ average Real-Time Settlement Point Prices. |
| RTEFG | none | *Real-Time Energy Factor for Generation*—The ratio of the Counter-Party’s QSE to QSE estimated energy sales as determined by ERCOT, based on information provided by the Counter-Party, to the Counter-Party’s Daily Estimated Generation. |

(5) For a Counter-Party that has all its QSEs representing neither LSEs nor Resource Entities, and that is not representing a CRR Account Holder, the IEL is equal to IMCE as defined in paragraph (2) of Section 16.11.4.1, Determination of Total Potential Exposure for a Counter-Party.

(6) For a Counter-Party that is only a CRR Account Holder and is not a QSE, the IEL is zero.

**16.11.4.3 Determination of Counter-Party Estimated Aggregate Liability**

(1) After a Counter-Party commences activity in ERCOT markets, ERCOT shall monitor and calculate the Counter-Party’s EAL based on the formulas below.

**EAL *q* = Max [IEL during the first 40-day period only beginning on the date that the Counter-Party commences activity in ERCOT markets, RFAF \* Max {RTLE during the previous *lrq* days}, RTLF] + DFAF \* DALE + Max [RTLCNS, Max {URTA during the previous *lrq* days}] + ILE*q***

**EAL *t* = Max [RFAF \* Max {RTLE during the previous *lrt* days}, RTLF] + DFAF \* DALE + RTLCNS**

ERCOT may adjust the number of days used in determining the highest RTLE and/or URTA, and/or to exclude specific Operating Days to calculate RTLE, URTA, OUT, or DALE.

The above variables are defined as follows:

| **Variable** | **Unit** | **Description** |
| --- | --- | --- |
| EAL*q* | $ | *Estimated Aggregate Liability for all the QSEs* represented by the Counter-Party if those QSEs represent either LSEs or Resource Entities. |
| EAL *t* | $ | *Estimated Aggregate Liability for all the QSEs* represented by the Counter-Party if those QSEs do not represent either LSEs or Resource Entities. |
| IEL | $ | *Initial Estimated Liability for all the QSEs* represented by the Counter-Party if at least one QSE represented by the Counter-Party represents either LSEs or Resource Entities as defined in paragraphs (1), (2), (3) and (4) of Section 16.11.4.2, Determination of Counter-Party Initial Estimated Liability. |
| *q* |  | QSEs represented by the Counter-Party if those QSEs represent LSEs or Resource Entities. |
| *t* |  | QSEs represented by the Counter-Party if those QSEs do not represent either LSEs or Resource Entities. |
| *a* |  | CRR Account Holders represented by the Counter-Party. |
| RTLE | $ | *Real-Time Liability Extrapolated*—M1 multiplied by the sum of the net amount, with zero substituted for missing values, due to or from ERCOT by the Counter-Party in the 14 most recent Operating Days for which RTM Initial Statements are produced for Counter-Parties according to the ERCOT Settlement Calendar divided by 14. |
| URTA | $ | *Unbilled Real-Time Amount*—M2 multiplied by the sum of the net amount, with zero substituted for missing values, due to or from ERCOT by the Counter-Party in the 14 most recent Operating Days for which RTM Initial Statements are produced for Counter-Parties according to the ERCOT Settlement Calendar divided by 14. |
| RTL | $ | *Real-Time Liability*—The estimated or settled amounts due to or from ERCOT due to activities in the RTM for an Operating Day, as defined in Section 16.11.4.3.2, Real-Time Liability Estimate. |
| RTLCNS | $ | *Real-Time Liability Completed and Not Settled*—For each Operating Day that is completed but not settled, ERCOT shall calculate RTL adjusted up by *rtlcu* if there is a net amount due to ERCOT or adjusted down by *rtlcd* if there is a net amount due to the QSE.  RTLCNS = Sum of Max (*rtlcu* \* RTL, *rtlcd* \* RTL) for all completed and not settled Operating Days  Where:  *rtlcu* = Real-Time Liability Markup  *rtlcd* = Real-Time Liability Markdown |
| RTLF | $ | *Real-Time Liability Forward*—rtlfp multiplied by the sum of estimated RTL from the most recent seven Operating Days.  RTLF = *rtlfp* multiplied by the Sum of Max (*rtlcu* \* RTL*, rtlcd* \* RTL) for the most recent seven Operating Days  Where:  *rtlfp =* Real-Time Liability Forward Percentage |
| DAL | $ | *Day-Ahead Liability*—The estimated or settled amounts due to or from ERCOT due to activities in the DAM for an Operating Day, as defined in Section 16.11.4.3.1, Day-Ahead Liability Estimate. |
| ILE***q*** | $ | *Incremental Load Exposure*—In the event of a Mass Transition necessitated by the default of a Counter-Party representing a QSE associated with an LSE, ERCOT may adjust the TPE of the Counter-Parties representing QSEs that are qualified as Providers of Last Resort (POLRs) to reflect the estimated Incremental Load Exposure (ILE) resulting from the Mass Transition. The adjustment will be based on the POLR’s *pro rata* share of the defaulting Counter-Party’s RTLE, based on the total estimated Electric Service Identifiers (ESI IDs) to be transitioned. ERCOT will communicate any such adjustment to the Authorized Representative of each Counter-Party who is a POLR within 24 hours of the initiation of a Mass Transition. The ILE adjustment will remain in place no more than the number of days necessary to effect a Mass Transition for the defaulting Counter-Party, after which time the incremental exposure will be fully reflected in the Counter-Party’s unadjusted TPE. |
| DALE | $ | *Average Daily Day-Ahead Liability Extrapolated*—M1 multiplied by the sum of the net amount, with zero substituted for missing values, due to or from ERCOT by the Counter-Party in the seven most recent Operating Days for which DAM Settlement Statements are produced for Counter-Parties according to the ERCOT Settlement Calendar divided by seven. |
| M1 |  | M1 = M1a + M1b—Multiplier for DALE and RTLE. Provides for forward risk during a Counter-Party termination upon default based upon the sum of the time period required for any termination upon default (M1a) and the time period required for a Mass Transition only (M1b). The M1a component is applicable to all QSE. The M1b component is applicable only to any QSE associated with a LSE.  M1a = Time period required for any termination from an Operating Day.  M1a is comprised of a fixed value (*M1d*), representing days from issuance of a collateral call to termination, and a calendar day-specific variable value. For any Operating Day, M1a is equal to the total number of forward calendar days encompassed by starting on the Operating Day, including *M1d* Bank Business Days forward, and adding any ERCOT holidays that are also Bank Business Days.  M1b = Weighted average transition days = Min(B, (2 + Max(1, (u+1)/2))\*(1-DF)), rounded up to whole days.  Where:  u = (ESIn/r) Unscaled number of days to transition.  B = Benchmark value. Used to establish a maximum M1 value.  ESIn = Number of ESI IDs associated with an individual Counter-Party. This value will be updated no less often than annually by ERCOT and updated values communicated to individual Counter-Parties. Counter-Parties entering the market will provide an estimated number of ESI IDs for use during their first six months of market activity. Subsequent to this time, the value for that Counter-Party shall be updated by ERCOT concurrently with other Counter-Parties with QSEs representing an LSE.  r = Assumed ESI ID daily transition rate.  DF = Discount Factor applied to M1b if the Counter-Party is eligible for unsecured credit under Section 16.11.2, Requirements for Setting a Counter-Party’s Unsecured Credit Limit, or meets other creditworthiness standards that may be developed and approved by TAC and the ERCOT Board. |
| M2 |  | Multiplier for URTA. |
| RFAF | None | *Real-Time Forward Adjustment Factor*—The adjustment factor for RTM-related forward exposure as defined in Section 16.11.4.3.3, Forward Adjustment Factors. |
| DFAF | None | *Day-Ahead Forward Adjustment Factor*—The adjustment factor for DAM-related forward exposure as defined in Section 16.11.4.3.3. |
| *lrq* | Days | Look-back period for RTM to find the maximum of RTLE or URTA for all QSEs represented by the Counter-Party if any of the QSEs represented by the Counter-Party represent either Load or generation. |
| *lrt* | Days | Look-back period for RTM to find the maximum of RTLE or URTA for all QSEs represented by the Counter-Party if none of the QSEs represented by the Counter-Party represent either Load or generation. |

The above parameters are defined as follows:

| **Parameter** | **Unit** | **Current Value\*** |
| --- | --- | --- |
| *rtlcu* | Percentage | 110% |
| *rtlcd* | Percentage | 90% |
| *rtlfp* | Percentage | 150% |
| *ufd* | Days | 55 |
| *utd* | Days | 180 |
| *M1d* | Days | 8 |
| *B* | Days | 8 |
| *r* | none | 100,000 per day |
| *DF* | Percentage | 0 |
| *M2* | Days | 9 |
| *lrq* | Days | 40 |
| *lrt* | Days | 7 |
| \* The current value for the parameters referenced in this table above will be recommended by TAC and approved by the ERCOT Board. ERCOT shall update parameter values on the first day of the month following ERCOT Board approval unless otherwise directed by the ERCOT Board. ERCOT shall provide a Market Notice prior to implementation of a revised parameter value. | | |

(2) A QSE that does not represent LSEs or Resource Entities may request favorable M1 (which for any Operating Day, is equal to the total number of forward calendar days encompassed by starting on the Operating Day, including two (2) Bank Business Days forward, and adding any ERCOT holidays that are also Bank Business Days) from ERCOT by agreeing to all of the following conditions:

(a) The QSE shall suspend all RTM activity and reject all Energy Trades, Capacity Trades, Ancillary Service Trades, and DC Tie Schedules submitted by the QSE for all Operating Days following the Operating Day the Counter-Party representing the QSE receives notice of suspension from ERCOT in accordance with paragraph (5) of Section 16.11.5, Monitoring of a Counter-Party’s Creditworthiness and Credit Exposure by ERCOT, and such RTM activity shall not be engaged in by any other QSE represented by the same Counter-Party.

(b) If a Counter-Party representing the QSE increases its Financial Security as required by ERCOT in paragraph (6)(a) of Section 16.11.5 and receives notification from ERCOT of cancellation of suspension, the QSE can resume RTM activities immediately following receipt of such notification.

(c) ERCOT, at its sole discretion, may terminate the Counter-Party or permanently revoke its ability to receive M1 treatment under this paragraph if the QSE fails to comply with paragraph (2)(a) and (2)(b) above.