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| NPRR Number | [1146](https://www.ercot.com/mktrules/issues/NPRR1146) | NPRR Title | Credit Changes to Appropriately Reflect TAO Exposure |
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| Date | | October 13, 2022 | |
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| Submitter’s Information | | | |
| Name | | Shams Siddiqi | |
| E-mail Address | | [shams@crescentpower.net](mailto:shams@crescentpower.net) | |
| Company | | Rainbow Energy Marketing Corporation | |
| Phone Number | | 512-619-3532 | |
| Cell Number | | 512-619-3532 | |
| Market Segment | | Independent Power Marketer (IPM) | |

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| Comments |

Rainbow Energy Marketing Corporation (REMC) submits these comments addressing ERCOT comments to Nodal Protocol Revision Request (NPRR) 1146 as follows:

1. ERCOT noted that the provision to suspend Trading Activity Only (TAO) Qualified Scheduling Entities (QSEs) would need to be automated, as there currently is no system mechanism to temporarily suspend Counter-Parties. NPRR1146 proposed behavioral rules for the QSE to suspend Real-Time Market (RTM) activities upon receiving a collateral call with severe consequences for non-compliance to those rules – such as possible termination of the Counter-Party. The intent of NPRR1146 was to avoid system changes to systematically suspend Counter-Parties but rather rely of this behavioral rule with consequences for non-compliance.

However, given ERCOT’s preference to automate suspension and the likely cost of implementing such automation, REMC is removing the favorable M1 treatment and thus any need to suspend TAO QSE RTM activities in these comments. The automation of QSE suspension, which would be a valuable tool for ERCOT and the market, may be taken up later at a more opportune time when related systems are updated or being modified. For this NPRR, ERCOT’s first concern is addressed by the changes in these comments.

1. ERCOT argues that using the maximum of Unbilled Real-Time Amount (URTA) and Real-Time Liability Completed and not Settled (RTLCNS) is a means of maintaining conservatism in the Total Potential Exposure (TPE) calculation. Conservatism is increasing TPE with increasing exposure – maybe even increasing TPE at a greater rate than the increase in exposure. However, increasing TPE and thus collateral posting requirement when exposure is reduced or even reversed (where the Counter-Party is owed by ERCOT) is not conservatism – it is an error in the TPE calculations. Thus, as an example, a TAO QSE typically exports power over Direct Current Ties (DC Ties) when ERCOT market prices are low and imports power when there’s scarcity on the ERCOT System and ERCOT market prices are high. However, due to the URTA term which applies the higher scarcity prices to historical exports (URTA assumes that the QSE will continue to export at scarcity prices when ERCOT already has the information in RTLCNS that the QSE is actually importing), the Counter-Party’s TPE is significantly increased when ERCOT’s exposure to the Counter-Party is actually reduced if not reversed. During Winter Storm Uri, absent ERCOT intervention, this error in TPE calculation would have unnecessarily resulted in such QSEs defaulting and thus depriving the ERCOT market from critical supply during a crisis when actually the Counter-Party was owed millions. This same issue arises every time there’s scarcity in the ERCOT grid. If the QSE continues to export during scarcity, then the RTLCNS term will increase TPE calculated exposure by not just the amount of increased exposure but 110% of increased exposure by applying Real-Time Liability Markup. However, if the QSE starts importing, then RTLCNS appropriately reduces TPE by 90% of decreased exposure by applying Real-Time Liability Markdown. Thus, RTLCNS is likely more conservative than URTA if the QSE historical activity does not change or increases (URTA does not capture increased activity) with increased market prices but, unlike the erroneous increase in TPE when QSE activity reverses from historical activity with URTA, RTLCNS appropriately decreases TPE while applying a conservative discount to the credited amount.

At a time when the Texas Legislature and the Public Utility Commission of Texas (PUCT) are taking extraordinary steps to ensure reliable supply during scarcity, it is incumbent on the market to correct an error in credit calculations to not potentially lose a significant amount of supply to serve Load. Maintaining supply during scarcity (so called “tail events”) is critically important to avoid Load shed. Again, RTLCNS calculation for TAO QSEs is accurate (since there is no estimated Load associated with TAO QSEs) and accurately captures the exposure from unbilled days with conservatism already built into RLCNS (110% for Real-Time Liability Markup and 90% for Real-Time Liability Markdown). Eliminating the URTA for TAO QSE fixes the error in TPE calculations. This does not benefit only one subset of Counter-Parties but all Counter-Parties with TAO QSEs. If the estimated Load in RTLCNS is substantially accurate, then URTA can be eliminated for all QSEs (since RTLCNS would capture possible increased Load that may have caused the scarcity which URTA does not capture) – however, this NPRR does not propose that change as REMC does not have information on the accuracy of estimated Load in RTLCNS.

1. Finally, ERCOT thought that NPRR1146 coupled market suspension with minimal collateral requirements for certain QSEs. That was not the case and clarifying language could be added to make that clear. However, since the suspension provision has been removed by these comments, this concern is no longer applicable.

REMC believes that ERCOT’s concerns are addressed by these comments and urges stakeholders to endorse the NPRR with these changes.

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| Revised Cover Page Language |

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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; * 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. |
| 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.  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 Unbilled Real-Time Amount (URTA) term in 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. This incorrect Total Potential Exposure (TPE) increase due to URTA happens every time TAO QSE activities change in response to scarcity prices. Eliminating URTA for TAO QSE addresses this issue. To ensure reliable supply during scarcity, this error in credit calculations needs to be fixed to avoid the unnecessary potential loss of a significant amount of supply to serve Load.  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.  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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| Revised Proposed Protocol Language |

**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. | | |