ERCOT CORPORATE STANDARD

Document Name:	Market Credit Risk Corporate Standard
Document ID:	CS3.6
Effective Date:	~~March 22, 2011~~Upon Board Approval
Owner:	Board of Directors
Governs:	ERCOT Personnel
Approved:	Board of Directors, ERCOT, Inc.

1. Purpose

This Market Credit Risk Corporate Standard provides a framework by which the ERCOT Board of Directors seeks to maintain the long-term financial integrity of the ERCOT market and to help ensure that overall market credit risk is maintained within acceptable limits.

Recognizing that a number of risk factors contribute to overall market credit risk and that it is beneficial to ~~quantify and describe~~understand the impact of these risks, ~~a model has~~ various~~certain~~ reports have been developed to help ~~evaluate the combined impact of key market credit risk factors~~understand the nature and scope of market credit risk.

This standard ~~and the output of the Potential Future Exposure Model do~~does not change collateral requirements or Market Participant obligations to comply with those collateral requirements under the ERCOT Protocols. Changes to collateral requirements require a change to ERCOT Protocols through Section 21, Process for Protocol Revision.

2. Definitions

Terms & Acronyms	Definition / Description
~~**Base Case**~~	~~The Potential Credit Risk Model scenario that considers only forms and amounts of collateral required by the ERCOT Protocols.~~
BOD	Board of Directors
~~**Current Case**~~	~~The Potential Credit Risk Model scenario that considers forms and amounts of collateral held as of a specific point in time. This scenario may include collateral amounts above those required by the ERCOT Protocols and which may be unilaterally withdrawn at the Counter-Party's direction.~~
CWG	Credit Work Group
~~**Expected Loss**~~	~~The average – although not the most common – outcome across all model outcomes. It represents the loss the ERCOT market as a whole should expect to incur over time under given market conditions as a result of its portfolio credit risk.~~
~~**Loss Distribution**~~	~~A range of potential losses under a specific set of parameters with a~~

Terms & Acronyms	Definition / Description
	given probability of occurrence
Potential Future Exposure (PFE) Model	The financial model that ERCOT uses to measure potential credit risk. It is constructed using a standard Potential Future Exposure framework that produces a portfolio Loss Distribution of potential losses.
Potential Future Exposure (PFE) Report	A report that summarizes the results from the PFE Model together with ERCOT's analysis.
Potential Future Exposure	An estimate of potential credit risk resulting from existing counterparty relationships in light of possible future risk factors such as price volatility and volume escalation.
Probability of Default (PD)	A counter-party specific estimate of the likelihood that a specific counter-party will default over a specified time horizon
TAC	Technical Advisory Committee
Total Potential Exposure (TPE)	A measure of estimated credit risk as defined in ERCOT Protocols.

3. Standards

Market Credit Risk Objective

In seeking to fulfill BOD objectives to provide for a reliable Texas electricity market, ERCOT stakeholders will

- directly consider the credit implications of operational or market decisions, and
- seek to maintain sufficiently detailed understanding of the nature and scope of market credit risk so as to be able to identify material changes in ERCOT's credit risk profile in a timely manner and
- seek to maintain a balance of identified key credit risk factors such that the combined impact of these factors yields a market-wide credit risk profile consistent with an investment grade rating.

Delegation of Authority

Responsibility for monitoring and reporting on credit risk for the market consistent with this standard is hereby delegated to the Chief Executive Officer, the Vice President – Credit and Enterprise Risk Management and the TreasurerDirector, Credit. These individuals will ensure the BOD is advised of material changes in ERCOT's credit risk profile as measured by the PFE Model.

This delegation does not mean that the results of any particular model analysis or report will be the final determination of credit risk in the ERCOT market. Such determination rests with the BOD.

Internal Control

The Vice President, Credit and Enterprise RiskTreasurer will ensure that written procedures and internal controls are established over the portfolio credit risk analysis

process to ensure that results are consistent with the approved process reflected in this standard.

The Vice President, Credit and Enterprise Risk~~Treasurer~~ will ensure that these controls are reviewed periodically by ERCOT's Internal Audit staff to monitor compliance with control procedures. The results of Internal Audit reviews as well as underlying controls may be reviewed by the Finance and Audit Committee of the BOD upon request.

~~In addition, the Treasurer, in cooperation with the BOD, will seek an independent review of the PFE Model prior to incorporating the PFE Model into any determination of collateral requirements or within one year after Nodal market implementation and at least biennially thereafter.~~

Measurement

ERCOT ~~will use a standard Potential Future Exposure framework for estimating credit risk. The PFE Model, which was built on this framework, will be maintained within this framework.~~recognizes that one metric cannot capture all aspects of credit risk.

Therefore, a~~A~~t a minimum, ERCOT's ~~portfolio~~ credit risk ~~estimation~~ reporting for the Nodal market will include the following risk factors:

- ~~Estimated Probability of Default for each QSE~~Creditworthiness of Counter-Parties,
- ~~Forward price estimation~~Market activity volume,
- ~~Price volatility estimation for both Real Time and Day Ahead Markets as appropriate,~~Net load and generation Counter-Party concentration,
- ~~Volume escalation behavior estimation, taking into consideration both Real Time and Day Ahead Market volume activity~~Total Potential Exposure by type of Counter-Party
- ~~Estimated value of Congestion Revenue Rights,~~Collateralization relative to Total Potential Expsosure and
- ~~Simplified collateral calculations~~Total potential exposure relative to stress scenario benchmarks.

As applicable, reporting will incorporate time series to aid in the interpretation of credit risk factors and identification of changes to ERCOT's credit risk profile.

~~ERCOT will recommend updates of these and other risk factors if key risk factors change.~~ ERCOT will provide other information or analyses as necessary to effectively communicate the sources and scope of market credit risk.

~~ERCOT will update model assumptions periodically with CWG input. The Finance and Audit Committee will be informed of all model parameter changes.~~

At ERCOT's discretion or upon request by the BOD, TAC or CWG, ERCOT will run stress scenarios ~~in addition to the Base Case and Current Case~~with respect to market credit exposure to aid in the understanding of the impact of ~~to quantify~~ extreme ~~credit risk~~ events, such as ~~(incorporating such things as market price events, high correlations of default, impacts of specific types of market activities and high concentration of~~

~~exposures to counter-parties or types of counter-parties).~~extreme prices or market conditions.

~~While recognizing that it is impractical to model all possible loss scenarios within the PFE Model, the PFE Model is a valuable tool to more effectively estimate credit exposure within the ERCOT market under set assumptions. The model considers identified risk factors and provides an indication of potential losses; however, actual losses may be more or less than those indicated by the model.Also, since PFE by itself does not provide a full picture of risk, ERCOT utilizes other metrics to provide a broader understanding of credit risk.~~

Reporting

ERCOT will ~~maintain and run the PFE Model and will prepare a summary analysis of results~~prepare credit risk reporting:

1. ~~at least quarterly~~bi-monthly for the F&A Committee,
2. whenever ERCOT determines there have been significant changes ~~in underlying credit risk assumptions which warrant a model run~~in ERCOT's credit risk exposure or credit risk profile, and
3. upon request of TAC or CWG when contemplating market rule changes for which significant credit implications are being evaluated.

~~The PFE Report will, at a minimum, include:~~

~~1. the Base Case and Current Case scenarios,~~
~~2. Expected Loss, median loss and Loss Distributions at the 90, 95, 99 + percentiles for required and ad hoc scenarios,~~
~~3. large impact stress scenarios at or above the 99th percentiles and other stress scenarios,~~
~~4. a listing of inputs used and assumptions made (specific, where possible; general when inputs are counter-party specific), and~~
~~5. ERCOT's summary analysis of the reasons for significant changes in the measurement of credit risk from the prior PFE Report.~~

~~A summary of the PFE Report will be provided to the Finance and Audit Committee of the BOD, TAC and the CWG at least quarterly.~~

Market Credit Risk Corporate Standard Adoption

ERCOT's Market Credit Risk Corporate Standard was adopted by resolution of the BOD. The standard is reviewed at least annually by the Finance and Audit Committee and any modifications made thereto must be approved by the BOD.