

Balancing Act: Successfully Measuring and Managing Credit Risk in an Energy Trading Environment

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At the height of Enron's "glory days," did you trust their audited financial statements and earnings reports? During the price spikes of 1998, did you trust your counterparties enough to act as their middleman, assuming their performance and credit risk by way of a "sleeve"?

Perhaps ironically, the word "credit" derives from the Latin word *credere* which means "to believe in or to trust," but Enron showed all of us that sometimes you can't even trust the biggest players in the market. And while the credit events in the summer of 1998 had already eroded much of the trust among energy trading partners prior to the Enron debacle, the effects of the industry's largest Chapter 11 bankruptcy filing continue to ripple through the industry today.

So how do you compete and succeed in today's deregulated market without a certain amount of trust? Thankfully, there are proven methods you can employ to balance the trust required to do business and the skepticism needed to manage risk.

As a non-profit energy marketing and trading organization for public power, the tolerance for credit risk and the operating performance metrics at The Energy Authority® (TEA®) are likely to be more conservative than those of investor-owned utilities or energy marketers. Nevertheless, TEA exists to extract the maximum value from the wholesale markets for each of its members' portfolios while ensuring overall credit risk exposure remains within acceptable parameters.

Achieving that balance rests in large part on establishing and implementing an effective credit risk management strategy. This strategy is based on a platform of seven key elements, including: 1) a *specific credit policy* to guide decisions, 2) appropriate analytical tools such as *credit scoring models* to evaluate counterparties and set credit limits, 3) a system to *monitor market intelligence* on your counterparties, 4) a methodology to *evaluate credit exposure*, 5) a system to measure *peak potential exposure*, 6) tools to determine *credit value at risk*, and 7) the *ability and readiness to provide credit support* when a call for collateral comes. Each of these elements is explained in greater detail below.

First, a company's **credit policy** is the heart of its credit risk management program. A good credit policy articulates the company's credit goals and specifies the processes to be used to achieve those goals. These processes should include guidelines for setting credit limits and for identifying, measuring, managing, and reporting credit risk exposures.

Most often, a company's risk management policy defines the credit policy which, in turn, reflects the company's risk appetite. The credit policy should also establish methods for evaluating counterparties and setting credit limits, set a credit value at risk limit, identify individuals who can approve credit limits and exceptions, define the calculation of credit exposure, and outline how credit violations and exceptions to the policy are handled.

Appropriate business processes and analytical credit tools are a critical component of the evaluation, monitoring and measurement activities associated with effective credit practices. For instance, **credit scoring models** that incorporate quantitative and qualitative factors are necessary tools for evaluating counterparties and setting credit limits. The factors included in these models should be carefully selected to reflect the dynamics of the current market.

We recommend you use different scoring models for different types of trading counterparties. This helps compensate for the inherent differences in the business profile, debt structure and operating strategy among consumer-owned utilities and producers, investor-owned utilities, and energy marketers.

In addition, it's important to also use a size component in setting a credit limit. For example, if you have a large investor-owned utility and a small marketing subsidiary, both of which have an overall credit score of AA, it would be inappropriate for both companies to have the same credit limit. Therefore, the size of the entity—based on equity, assets, or some other appropriate measure—should be considered.

Further, it's likely that some counterparties will fail to qualify for unsecured credit. In these events, you'll want to use parent guaranties, bank letters of credit or cash to secure credit support. A collateral tracking system helps ensure that credit support renewals occur as required. It's also necessary to review the creditworthiness of the guarantor company or letter of credit issuer in the same manner as you evaluate your counterparties.

After the initial credit reviews are complete and the credit limits are set, the next critical component of an overall strategy is **continuous monitoring of counterparties**. Defaults don't happen overnight and problems take time to evolve, so daily evaluation of market intelligence relating to your counterparties is a prudent credit practice.

Good sources of daily market intelligence include Bloomberg, CreditRisk Monitor, rating agency reports, Megawatt Daily, the Power Marketing Association's Web site, industry contacts and more.

At TEA, news and events that fall within certain criteria can trigger an immediate review of a particular counterparty. This can result in an adjustment to their credit limit or a downgrade to "internal credit watch" status. At a minimum, we perform a credit review of each counterparty annually.

But it's not enough to merely set credit limits. It's important to measure **current credit exposure** by monitoring trading activity against counterparties' credit limits—preferably in real time with an automated process.

At TEA, we have established an automated, real-time credit exposure system. Available credit is updated as soon as a trade is entered into our trade capture system or settlement payments are received. Forward positions are re-marked to market daily as pricing information is updated.

Your credit policy should outline the methodology for calculating current credit exposure and should include billed and unbilled receivables, forward physical exposures, and forward financial exposures. Keep in mind that netting, exposure to the counterparty across different commodities and contracts, and parent/subsidiary relationships can all affect the calculations.

At the end of the day, your current credit exposure should be a measure of the current replacement cost of your positions. The credit report, which calculates and reports current credit exposure, must be accessible by energy trading and marketing personnel in real time. It's essential that they monitor credit availability for potential future deals as no trader should enter into a transaction that puts a counterparty over its credit limit. Therefore, you must have a clear plan of action as counterparties approach their credit limits.

A good credit report will mark your forward positions to market using the current day's market prices. This gives you a snapshot of existing exposure if your counterparty were to default *today*. However, today's market price will change over time, so the value of a long dated deal can increase or decrease significantly. That's why you need to consider "How large can this current exposure become *in the future*?"

Credit Exposure at Risk (CER), also known as peak potential exposure, measures the potential future replacement cost of your forward positions. This analysis involves statistical modeling using probability analysis or simulations, a forward price curve, volatility curves, and correlations. TEA's CER model is based on option valuation principles and gives us the maximum—or worst case—potential exposure with a 95% confidence rate.

Your company must also know—within some confidence interval—how much credit loss you could have at any given time with the current portfolio of trades. TEA's **Credit Value at Risk (CVaR)** model incorporates the default probabilities that correspond with a counterparty's credit rating, projected recovery rates, and counterparty correlations. These factors are applied to the potential credit exposure described above to derive a worst-case credit loss amount within a 95% confidence interval. Your risk policy should address the maximum CVaR limit for your company's risk appetite.

And finally, a successful credit risk management program includes **your company's ability and readiness to provide credit support** when the inevitable call for collateral comes from your counterparty.

For example, if your company qualifies for a significant unsecured credit limit, the possibility remains that one of your counterparties may make a margin call. Or, your company may get called for performance assurance if a material adverse change occurs, such as a rating agency downgrade.

Even if you operate a municipal utility with modest credit lines, market changes in a forward position could cause a counterparty to call you to cover their mark-to-market exposure from the position that put you over your credit limit. And many power marketers have to post credit support up front before trading begins due to the absence of a rating agency's rating or audited, stand-alone financial statements.

Whatever the situation, it is wise to align your company with a creditworthy guarantor willing to provide a guaranty on your behalf, or establish a letter of credit facility with a well-rated bank. Additionally, you can set aside cash for margining, prepayments, early settlements and more. Regardless of your tactics, it's essential to prepare for large and sudden liquidity demands in the form of collateral calls; otherwise you risk contributing to an event of default.

In conclusion, a company culture that recognizes the importance of energy credit risk management, the support of your company's executive management team, a qualified and competent credit staff, and implementation of these seven fundamentals will go a long way toward helping your utility effectively measure and manage its credit risk in the current energy trading market.

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