ENERGY AND COMMODITIES

AVOIDING THE BLIND SPOTS IN ENERGY TRADING: MARKET DATA AND RISK ANALYTICS

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Avoiding the Blind Spots in Energy Trading: Market Data and Risk Analytics

How to Make the Volatility Smile

"The volatility of physical energy commodities means that default rates are often high or uncertain, boosting the value of credit risk analytics. And for traders, price volatility and the desire to maximize the value of their assets mean it is now more important than ever to acquire and provide strong market data and mitigate any pricing risks."

Chartis RiskTech Quadrant® 2017 for ETRM

A large, U.S.-based power company has over 260 different sources of information hitting its trading desks during the typical trading day. A team of analysts scrape external feeds and data bases, internal systems, news sites, and other structured and unstructured large data sets. That data then gets cleaned, consolidated and processed, so it's ready for analysis, available to various internal users in multiple geographies.

"The current process of getting accurate and timely data from multiple sources and vendors is manual, time consuming and error prone. It prevents quick decision making on pricing trades and hence results in missed market opportunities," said the head of trading of the above company.

In other words, even the companies that invest heavily in data acquisition and analytics are struggling to meet speed and scale requirements, especially since current political events and market volatility create uncertainty that drives even greater need for accuracy and low-latency. This combined with an ever-increasing volume of trade data means extracting insights out of huge amounts of such diverse datasets in an efficient and scalable way complicates matters even further.

For a major integrated energy company, access to high quality, consolidated data is crucial to its ability to build 3D charts, forward curves, volatility surfaces and visualizations around its natural gas production and power generation assets. Additionally, that data can be used to perform a wide range of risk calculations from different Value-at-Risk approaches to Profit-at-Risk or Potential-Future-Exposure.

"All our data comes from our internal risk system which is maintained overseas, so we have no control over when and how we get our data. If we don't get monthly granular forward curves, we can't calculate Mark-to-Market (MTM) on our physical and paper forward trades," said the senior vice president of trading at another energy producer.

The processing of all this data varies from company to company and system to system, often leaving much to be desired. Yet decisions must be made, and those responsible for approving these must act on the best information available.

Data is the raw material alpha is made of

For natural gas and electricity producers, energy traders, or anyone who manages physical and financial positions around assets, there may be no better hedge against the trader's lament than good, clean, reliable data.

In a volatile world economy, collecting, validating and transforming large, unpredictable volumes of real-time and historical market data in a predictable, repeatable and efficient manner becomes a challenging task to manage in-house. Running such an operation may turn into a significant investment - from managing multiple data vendors to hiring top analysts and data scientists, to maintaining an infrastructure and providing access to that data throughout the organization across multiple geographies, all the while ensuring system security against cyber threats.

FIS' market data solutions such as MarketMap Energy and Kiodex Global Market Data give energy companies, utilities and traders access to raw market data as well as provide consolidated and enhanced data, based on data validation methodologies and quantitative analysis, performed by an in-house team of data analysts and former Wall street modelers and traders. Along with sophisticated charting, analysis, modeling, reporting and forecasting tools, FIS helps firms extract insights faster and conduct reliable data manipulations in a high-speed data storage environment.

"This involves clearly defining the commodities, regions, price assessments and indices critical to any given business," said Kurt Moser, COO of FIS' MarketMap. "A reliable data aggregation service will have the methodologies in place to accomplish just that."

FIS market data services provide flexibility and scalability to calibrate the data scope up or down, ensure high data quality and simplify access to information across multiple geographies in a fast, secure and reliable way. A range of bespoke, out-of-the box and third-party forward curves as well as proprietary analytical functions and flexible integration mechanisms make it easy to manage, manipulate and analyze energy and commodity data on the fly. It provides confidence that the information received has been vetted for redundancies, copyright infringements, irrelevancies and gaps – and normalized for actionable decision support – all without burning up precious enterprise bandwidth in the process. As a result, the externally hosted software, combined with secure, reliable and user-friendly interfaces, lend new agility in responding quickly to moving market opportunities.

Knowing the difference between forecasts and forward curves

Current political and market uncertainty and unpredictability breeds 'prognosticator fatigue'. It raises the question of how, if at all, energy producers and traders can gain a more holistic view of global markets and manage price risk more effectively.

Forecasts are limited as they "rarely fall outside of a reasonably tight 'consensus' band."[1] While forward curves don't typically go out long enough to provide the granularity needed to hedge with confidence. However, an integrated combination of sophisticated charting and forward curve modelling tools, based on a wide range of independent, high quality market data and analysis, can provide energy traders with a more qualitative picture of the market.

FIS' Kiodex developed a set of commodity forward curves that are marked at the end of each trading day. The curves are constructed using unbiased, raw data from over fifty primary and independent market sources. With over 900 forward curves, volatility surfaces and correlation term structures, Kiodex offers curves that can have monthly granularity from spot through to as much as 84 months. The value of the curves is mainly derived from the neutrality of both the raw data and its processing, since Kiodex is not engaged in any trading. In addition, Kiodex receives candid feedback from its user community that comprises of some of the world's largest commodity producing, consuming and trading companies.

"Independent market data is a cornerstone of granular risk analytics for correct trade valuations, price validations and Value-at-Risk (VaR) calculations for a wide range of commodities – from the crude oil, refined petroleum product, natural gas, power, base and precious metal, softs/agricultural, freight/maritime, pulp and paper, coal, weather, petrochemical, emissions, and currency markets," said Tim Smith, COO of FIS' Kiodex. "Accurate, monthly granular, seasonally adjusted valuation means accurate risk reporting, which in turn, can help to reduce overall risk."

Credit risk

Uncertainty in natural gas and power prices and their evolving price relationships brings cross correlation management and risk modelling to the top of energy executives' agendas. Natural gas production is taking place in hard-to-reach areas that makes distribution expensive, bringing commercial lending back into the energy space. With increasing levels of capital required to enter into the production business, banks are increasingly participating in the retail lending space for commodities businesses.

At the same time, hedging portfolios evaluated with Monte Carlo VaR models, which simulate returns using correlations, should consider recalibrating to employ shorter correlations windows to recognize the new normal.

Both corporates and the banks that finance energy producers and retailers' operations need to be able to better gauge cash flow volatility net of financial hedge positions, with the flexibility to use both VaR and at-risk correlations over time using a wealth of historical data. The effects of growing price exposures to the supply-demand characteristics of non-US markets brings new challenges to hedging programs to source illiquid basis location data and acclimate to a new phase in the production cycle. The ability to weigh the importance of historical events while also adjusting to the current environment by considering correlations generated using shorter return windows and implied volatilities will provide more accurate risk measures as the US energy landscape continues to evolve.

Cracking the Volatility Smile in Energy Trading

Finding alpha and ensuring that margins remain intact in a highly volatile political and market environment can be challenging. With high quality, reliable market data, coupled with shrewd risk analytics on their side – in separate modules or as an integrated, consolidated solution - energy traders are better equipped to avoid the blind spots and turn the volatility into competitive advantage.

[1] http://www.timera-energy.com/the-dangers-of-mixing-forecasts-and-forward-curves/

About FIS Solutions for Energy and Commodities

FIS solutions for energy and commodities help utilities and retailers, pipeline and storage operators, marketers and traders as well as integrated energy companies compete efficiently in global markets by streamlining and integrating the trading, risk management and operations of physical commodities and their associated financial instruments. Through real-time data, connectivity and analysis, FIS solutions help you achieve transparency and regulatory compliance, optimize end-to-end transaction and operational lifecycles and meet time-to-market needs with flexible deployment options. As your technology partner, we can help take advantage of the latest innovation and explore new opportunities. For more information, email us at **getinfo@fisglobal.com.**

About FIS

FIS is a global leader in financial services technology, with a focus on retail and institutional banking, payments, asset and wealth management, risk and compliance, consulting and outsourcing solutions. Through the depth and breadth of our solutions portfolio, global capabilities and domain expertise, FIS serves more than 20,000 clients in over 130 countries. Headquartered in Jacksonville, Florida, FIS employs more than 55,000 people worldwide and holds leadership positions in payment processing, financial software and banking solutions. Providing software, services and outsourcing of the technology that empowers the financial world, FIS is a Fortune 500 company and is a member of Standard & Poor's 500® Index. For more information about FIS, visit **www.fisglobal.com**

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