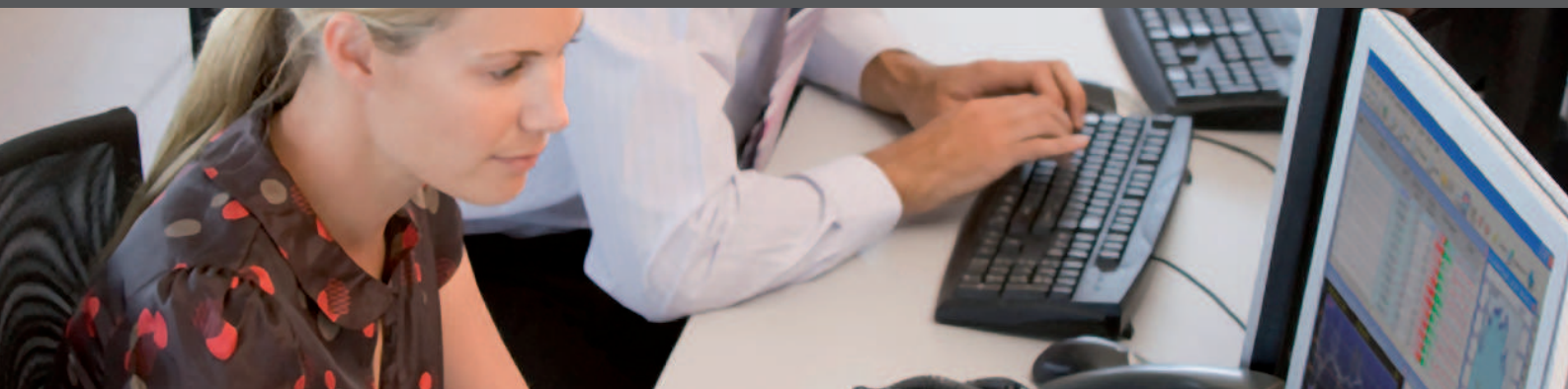


Product Overview

Energy Trading and Risk Management (ETRM)



ETRM is an energy trading and risk management system designed for asset-centric and trading focused companies, capturing physical and financial transactions, modeling and valuing assets, and supporting operations and settlements processes.

The Ventyx Energy Trading and Risk Management (ETRM) solution, coupled with Ventyx's extensive value-added services and industry knowledge provides the most comprehensive, scalable and straightforward solution available.

ETRM supports the needs of both asset-centric companies and trading focused organizations. It is extensible to handle new instrument and asset types and has the ability to link to external models, including Ventyx's Planning and Risk solution. ETRM is a multi-commodity solution that utilizes Straight Through Processing (STP) across the front, middle and back offices to support deal capture, deal management, position reporting, risk management, analysis, settlements, alerts, and reporting on a single platform.

Planning and Risk Provides:

ETRM supports all standard, and many non-standard deal types, for multiple commodities, including Physical (Forward, Indexed), Options, Swing, Swaps, Emissions, Heat, Cash Adjustment, FX, Gas Transportation (Flow and Rights), Gas Storage (Usage/Inventory), Transmission (Flow and Rights), Financial Transmission Rights, Profiles, Composite, Physical Assets, and supports several custom deal types.

ETRM's Deal Explorer, a central location where deals can be viewed, processed, and captured, is user configurable and views can be saved to enable users to access information in the way most suited to their use. Users are able to break down groups of the portfolio into more manageable segments utilizing a set of filters on the trades, called Consolidations. All deals that are entered into the ETRM system can be used in consolidations, and can be grouped with similar deal types for purposes of viewing, analysis and reporting. This view shows all details related to a deal and the risk exposure of all trades in the selected consolidation.

The Trading Front End (TFE) is a multi-functional trading module in which users can view positions and enter trades into ETRM. Positions are viewed and calculated in "trading screens", which shows information mapped against time buckets and product definitions in the system. Several trading screens can be created to track various positions and configured to show the specific information required. Additionally, ETRM supports automatic cascading of futures, using the termination date to break longer products into smaller granular products.

Users can also utilize an interactive position analysis tool that can provide a chronological view of users' positions across all parts of a portfolio. Positions can be viewed in either a graphical or tabular manner, in varying levels of detail for which users can view positions for energy volumes or prices, showing different data resolutions for different time periods.

Once deals are entered, ETRM will generate confirmations for any deals, based on the requirements of the master agreements. The solution provides a comprehensive, configurable confirmation workflow to generate and manage the confirmations process. A workflow can be defined for different deal types by assigning specific actions for each type, including the ability to set Authorized and/or Audited flags, generate a confirmation document, or fax a confirmation.

If the action selected causes a confirmation document to be generated, a document is generated using a pre-configured Word template, and stored to a location the customer has configured. Different template designs can be for each counterparty, location, deal types, etc., and can be configured to show either the details for each deal, or show just the deal with a consolidation of the details.

Risk Management

ETRM's risk capabilities differentiates the solution when compared to other trading systems. The solution provides standard mark-to-market calculations, as well as a Profit-at-Risk model which is more applicable to asset-centric organizations than traditional Value-at-Risk models. ETRM's capabilities are further extended when integrated with Ventyx's Planning and Risk solution.

The solution provides users with detailed analysis allowing for efficient management of physical assets, including the monitoring of risk in different levels, from the whole company down to a specific trade.

This allows the development of hedging strategies with specialist tools to calculate and analyze Profit at Risk (PaR).

Using the decision support tools, analysts can see the effect of adding a new trade(s), which enables them to assess how their position and risk relates to a variety of portfolio items such as production, end user sales, bilateral trades, spot trades, futures and standard product trades.

Risk analysis results enable analysts to perform sensitivity analysis in order to evaluate the impact on profit and risk of any trading, production or sales strategies.

Mark-to-Market

The MTM Calculator processes a portfolio, or a subset of the portfolio, and calculates values for the realized and unrealized portions of trades, utilizing granular forward curves constructed from market prices. There are two modes in which the MTM Calculator can operate: Closing or Latest. Closing calculations take place for a specified date and represent a final MTM for accounting and reporting purposes. Latest calculations take place using the most current market data and can be used for real-time valuations.

Value at Risk

Value at Risk (VaR) is the most commonly used risk measurement for a portfolio of assets. ETRM provides users with two methods for calculating Value at Risk: Delta Normal and Monte Carlo. Utilizing either of these methods, reports can be configured to calculate VaR across any subset of the portfolio, using either historical or implied volatilities. These reports can be run at end-of-day for a final, "official" report, or intra-day to provide an immediate snapshot of the portfolio. Reports display the total VaR for the portfolio, as well as uncorrelated and incremental VaR for each asset.

Profit at Risk

The ETRM Profit at Risk™ (PaR) analytic measures the extent to which a business's accrual based earnings for a future operating period might fall below expectations. Whereas Value at Risk (VaR) measures the risks of previously booked MTM earnings being lost over the next few trading days, PaR measures the risk to accrual based earnings over specific future operating periods.

The general concept behind PaR is a simulation of portfolio profitability using multiple price scenarios. In this approach, the value of each item in the portfolio is simulated going through delivery by determining the item's delivery quantity and valuing this against a forecast of the spot price at the time of delivery. This process is carried out for multiple scenarios of forecast spot prices. The result of this calculation is then aggregated and reported to the user in a meaningful way.

Credit Risk

Using ETRM, you can report on the credit used by a counterparty compared to a credit limit. This report will usually only show exposures created by sales to counterparties, except where netting agreements exist and buys will be included to offset sales exposures. The report groups the data by counterparty and separates it into buy and sell portfolio items based around three phases of credit risk: Invoiced Already, In Delivery, and Future.

It is possible to view the Credit Limit for a particular counterparty along with the values and volumes displayed in the report. The Credit report uses color indicators to indicate the status of the counterparties credit limit, providing a quick reference for traders and credit managers.

Curves and Market Data

The Curves and Market Data component provides a complete solution for day-to-day maintenance of different types of market data including price curves, historical price data and indices. Market data is used throughout the system, for example for real-time pricing, end of day reporting and settlement.

Price Forecasts

Price Forecasts are a fundamental tool in ETRM used in Profit at Risk calculations, which provides the solution with a forecast of the spot prices used to produce a set of profit scenarios for a portfolio. These price forecasts are created within ETRM via integration with the Ventyx Planning and Risk solution, or externally by other third party models, typically by an organization's Middle Office team, and imported into ETRM as a source model.

Index Manager

ETRM provides the ability to create, define and amend price indices to be used in market pricing throughout the system. Index prices in ETRM are defined through the use of Index Templates, which serve as the basis of Index Prices that are used by trades. An Index Template combines a price index with details of the periods covered by the index and specifies how prices are to be calculated over the defined index periods. Index Definitions are applied to a deal so that the deal can be priced against the index.

Curve Manager

ETRM's Curve Manager calculates and maintains forward curves, giving users the ability to price the current market position. A price curve for the period between the selected start and end dates is derived

from the market prices available for the standard products relevant to that period. Using a price region, commodity, currency, start date and end date, Curve Manager calculates prices and lists all chosen standard products and displays the calculated forward curve as a graph. Forward curves created in Curve Manager are used to calculate mark to market position in the MTM Server as well as being used in Shape Analysis. The system maintains both official and unofficial curves.

FX and Interest Rates

Exchange rates into ETRM from data provider at a fixed rate for a defined time period. These rates are used throughout ETRM, with forward curves being stored as sets of forward rates for a particular currency and a point of time in the future. Historical rates are stored as daily rates for each currency against the base currency.

Settlements and Invoicing

The Invoicing, Settlement and Cash Management component provides a fully integrated solution enabling the most complex deal types to be invoiced using deal and price data maintained within the system. The component also offers simplified two-way interface of data with external accounting systems, and cash flow and broker reports for cash management.

When the ETRM invoice process generates an invoice or purchase statement, the system searches for all contracts with payment terms corresponding to that date, and calculates the invoices based on the amount of energy and the price per energy unit. Once generated the invoices in the run can be generated using customized templates and the data passed to external AP/AR and finance systems.

Reporting

Reports can be generated for viewing calculated, user-requested information at any given time, on a regular or "as needed" basis. Reports are created according to user input criteria, enabling users to customize the results shown within a report. Standard reports are available with the ETRM client for report on Value-at-Risk (VaR) and Profit-and-Lost (P&L) calculations, and OLAP cube-based reports for Mark-to-Market (MtM) and Profit-at-Risk (PaR).

Additional Features

- Facilitates the day-to-day management of physical operations, scheduling and nominations. Integrates with software solutions to manage the gas nomination and power market communication processes and actual energy flows.
- Audit trail functionality tracks changes to deals and specific reference data and reports the history for that record. System records the actions and holds a comprehensive audit trail, including, user name and date/time stamps, whenever a deal or a specific item of reference data is created, amended or deleted in ETRM.
- Security administration provides full functionality to allow a client to set up and maintain users and their security privileges within ETRM, within three security levels: User, Group and Policy. Features full security event logging centrally and on each user's workstation, with a comprehensive security report for support and administration.
- Optional, intuitive business intelligence tools are provided to enable competitive advantage by enabling business users to analyze market, portfolio, counterparty, financial and risk data.



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Some of the world's largest private and public enterprises rely on Ventyx solutions to minimize risk, enhance operational and financial performance, and execute the right strategies for the future.

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