

Product Overview

SENDOUT



SENDOUT provides detailed dispatch optimization and assesses gas portfolio cost, revenue, and reliability while considering operational constraints and economic parameters.

Overview

SENDOUT® is used by energy companies as the foundation for gas supply planning and portfolio optimization processes. Ventyx's gas analytics solution set includes a detailed supply portfolio optimization module, which incorporates scenario and stochastic analysis and an asset valuation module, which simulates forward curves and related trading behavior.

The software suite provides an assessment of gas portfolio costs, reliability, risks, and opportunities, revealing the impact of potential operating, weather, and price conditions.

Ultimately, SENDOUT is an integrated platform for short-term through long-term portfolio optimization, decision evaluation, and asset valuation. SENDOUT supports an industry proven, comprehensive, defensible, and prudent gas supply planning and asset valuation analytical process.

The solution is comprised of two integrated components:

- **Optimization Module** – provides gas supply portfolio optimization, contract sizing, and scenario analysis
- **Asset Valuation Module** – simulates market trading behavior and determines intrinsic/extrinsic value of gas assets Gas portfolio network model

Optimization Module

The SENDOUT model harnesses powerful linear programming and mixed integer programming (LP/MIP) engines for scenario analysis and physical portfolio dispatch optimization. The objective function seeks to minimize total gas supply system costs, while simultaneously maximizing revenue opportunities associated with incremental markets, capacity release, and off-system sales transactions. SENDOUT simultaneously evaluates thousands of time-dependent economic and operational constraints across the study period.

This assures that short-term dispatch decisions are consistent with out-term requirements and targets, such as storage inventory targets, ratchets, and contract minimum take requirements.

Key Benefits

- Supports a proven and defensible resource planning process
- Evaluates multiple decision criterion simultaneously
- Provides optimization of portfolio utilization and costs within operating constraints
- Maximizes financial results by managing weather and price risks
- Increases revenues by assessing capacity release and sales opportunities
- Reduces regulatory costs through improved compliance and procedures
- Helps sustain a consistent and repeatable planning methodology
- Compares multiple scenario results and dispatch decisions side-by-side
- Improves analytical quality with a sophisticated, comprehensive, and flexible approach to gas supply planning

SENDOUT Process Flow

The Optimization Module provides two optimization types:

- **Standard Optimization** - determines the optimal use of the existing portfolio of resources to meet projected load requirements in a least cost manner based on variable costs only (considers fixed costs sunk).
- **Resource Mix Optimization** - evaluates and optimally sizes potential contracts and sales opportunities, while meeting load requirements in a least cost manner based on the fixed and variable costs associated with optional resources.

Ventyx's comprehensive gas planning solution differs from traditional portfolio analysis. Traditional analysis typically relies on a few scenarios as a proxy to support important decisions.

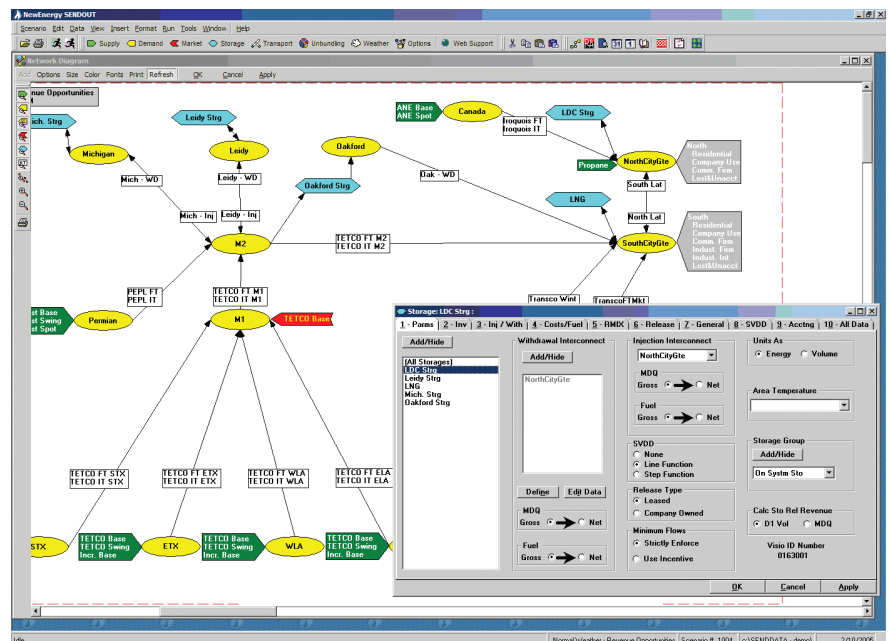
For example, with respect to weather (demand), relying on normal, design cold, and design warm provides a limited view of the portfolio under those specific conditions. In contrast, our solution not only supports deterministic scenario analysis, but also considers the probability and implications of a distribution of weather and price conditions, which may fall between and outside the range of the typical planning scenarios.

The probabilistic approach provides additional risk metrics for better resource decisions, including expected value, variability, and probability.

Asset Valuation Module

Asset Valuation determines the potential market value or liability associated with a gas asset, typically storage. SENDOUT determines the intrinsic and extrinsic value of an asset by leveraging Principal Component Analysis and Rolling Intrinsic Optimization. SENDOUT simulates day-to-day trading and scheduling behavior to evaluate arbitrage opportunities between futures, term, and take-or-pay contracts, spot and balance of month procurement decisions.

Daily transactions are executed without perfect knowledge of future price strips. Thus, each day new transactions are executed considering previously executed positions, which may be committed or unwound to take advantage of new price arbitrage opportunities. Market prices and related transactions are simulated daily and discounted cash flows are calculated to represent the value of the asset(s).



SENDOUT Software Suite Features

- Easy scenario and simulation creation with minimal data manipulation
- Fast simulation and optimization run times
- User-friendly, flexible, and intuitive interface specifically designed for the gas industry
- A comprehensive list of data items and parameters to accurately model gas system intricacies
- Flexible data management including various input options and integration with Microsoft Excel
- Customizable reports/graphs and seamless integration to Microsoft Excel, Access, Visio, Text, or HTML files
- Network diagramming and portfolio schematic visualization feature
- Over 100 comprehensive System Reports & Custom Reporting tools
- Dispatch and Gas Cost Forecasts



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Ventyx, an ABB company, is the world's leading supplier of enterprise software and services for essential industries such as energy, mining, public infrastructure and transportation. Ventyx solutions bridge the gap between information technologies (IT) and operational technologies (OT), enabling clients to make faster, better-informed decisions in both daily operations and long-term planning strategies.

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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