@ENERGY®/Swing

Swing contract pricing, hedging, and risk management for natural gas and power markets.

(Swing contracts are also called swing delivery, base load, variable load, take-or-pay, interruptible power supply and interruptible transportation contracts.)

Product Description

Swing contract positions are difficult to manage due to the multiple constrained exercise decisions that are at the heart of every swing. From a valuation standpoint, these exercise decisions mean that thousands of possible combinations of exercise decisions must be evaluated in order to ascertain the optimal strategy. In addition, any energy professional is well aware that valuation is simply the first step in managing the position.

When is it optimal to exercise? How much is a swing right worth? What is the best hedge position? @ENERGY/Swing takes the guesswork out of managing natural gas and power swing positions by delivering the quantitative information needed to support deal pricing, structuring, and position hedging. By using @ENERGY/Swing, energy companies are able to perform day-to-day optimization of their swing decisions, thus extracting maximum value from the swing contract. Maximum value for the swing contract ultimately translates into maximum value for the company.

What makes @ENERGY/Swing unique?
@ENERGY/Swing incorporates multiple types and layers of constraints while concurrently accounting for the seasonality inherent to energy markets. That's why @ENERGY/Swing has been used successfully for several years to evaluate November-March gas options, interruptible power supply, and several other types of structured products in gas and power markets. @ENERGY/Swing is one of the modules of the @ENERGY suite.

Key Features

Extensive Instrument Coverage: Swing contracts give the holder the right to take daily delivery of a certain nominated amount of commodity on certain future dates at a fixed price. The holder also has the right to change—or swing—this delivery amount. A swing right can be exercised on each delivery date. A predetermined maximum number of swings can be exercised during the life of the contract and overall maximum and minimum amount constraints can apply during the same time period. The supported set of instruments (see Coverage) can be extended by combining and chaining functions to value complex transactions. Swing includes templates that can be easily customized for specialized trades such as November-March peaking options and annual strips. FEA regularly expands instrument coverage and publishes new spreadsheet templates. On-Off Peak schedules are allowed to accommodate power swing contracts.

Comprehensive Results: All price and risk measures can be calculated with a single function call including scalar risk measures such as gamma, vega, theta, and so forth. The functions also return delta, gamma, and vega risk curves, which uncover the true exposure to the entire price and volatility term structure, not just to the spot price as with traditional risk measures.

Optimal Exercise Indicator: Swing functions display an optimal exercise indicator. This indicator specifies if a swing right should be immediately exercised and, if so, whether the delivery amount should be increased or decreased.

@ENERGY is the most widely used and accepted set of derivatives analytics in the energy industry.

9 of the top 10 US energy firms* have already chosen @ENERGY

*Based on the *ENERGY Business and Technology* magazine, February 2004

The @ENERGY Suite

@ENERGY/Basics

@ENERGY/Advanced

@ENERGY/Storage

@ENERGY/Swing

@ENERGY/Forward Curve

@ENERGY/Weather

@ENERGY/Power Generation *New*

@ENERGY/Load Serve *New*

Key Features (continued)

Daily and Nominated Delivery Amounts: @ENERGY/Swing can price both daily and nominated delivery contracts. In a daily delivery contract, the swing amount reverts to the fixed nominated amount immediately after delivery. In a nominated delivery contract, the swing amount becomes the new nominated amount that will be delivered – until exercise of a new swing right.

Flexible Settlement Terms: Financial settlement for delivery can be either at contract expiration on each delivery day, or for contracts spanning several months, at the end of each month.

Delivery Constraints: @ENERGY/Swing allows for a maximum and minimum delivery amount per day, a minimum and maximum amount over the lifetime of the contract, and a maximum number of swing rights available over the life of the contract. For contracts spanning several months, the maximum number of swing rights available each month can be specified.

Coverage

Swing functions cover the following:

- Daily swing contracts
- Nominated swing contracts
- Take or pay contracts
- Swing on spread contracts
- Delivery period extended to value contracts with a length larger than a month (e.g. November-March)
- Unlimited number of swings for the delivery period
- Mark-up defined as an absolute dollar amount or percentage of index
- Use of the full forward price curve, and forward volatility curve to price the contracts
- Lognormal and mean-reverting models of price behavior
- Hedge curves for state-of-the-art hedging
- New enhanced templates to value different types of swing contracts

Software Architecture

@ENERGY/Swing is a Microsoft Excel add-in that is written completely in C/C++ providing for extremely fast calculations. It includes Excel add-in functions (XLL files), customizable Excel templates, and documentation. When installed, @ENERGY/Swing XLLs add functions to Excel that are used like the built-in worksheet functions, allowing users to customize the included templates or create new ones. @ENERGY/Swing is also available as ErgLib™/Swing C library for Unix and Windows programmers who want to incorporate Swing functions into custom and third-party C, C++, Visual Basic, and SQL database applications

For More Information

Please contact your local FEA office, or visit us online at **www.fea.com**

BERKELEY
2100 Milvia Street
Berkeley, CA 94704-1113 USA

tel +1.510.548.6200
fax +1.510.704.0862

LONDON
75 King William Street
London, EC4N 7BE, United Kingdom

tel +44. 20.7618.2101
fax +44. 20.7220.7555

SYDNEY
Level 14, 9 Castlereagh Street
Sydney NSW 200

tel +61.2.9223.9333
fax +61.2.9223.1666