



# **Index Methodology Guide**

# ISE-REVERE NATURAL GAS INDEX™

#### **Issue 1.0**

Issue date: September 13, 2006 Print date: September 13, 2006

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## **Chapter 1.Introduction**

This document summarizes the methodology and rules used to construct, calculate, and maintain the ISE-REVERE Natural Gas Index<sup>TM</sup>.

The ISE-REVERE Natural Gas Index (ISE-REVERE\_FUM) provides a benchmark for investors interested in this energy sector.

Natural gas is a fossil fuel consisting primarily of methane. It is found in oil fields, gas fields and in coal beds. Natural gas is collected at its source through a network of pipes called gathering systems, refined, and transported longer distances through interstate pipelines, and then through distribution pipelines where it is delivered to natural gas customers.

An environmentally desirable alternative to oil, natural gas is safer to transport, cleaner burning, and is being utilized in a new generation of appliances and applications. In 2005, the US consumed more than 21 trillion cubic feet of natural gas, the energy equivalent of about 3.5 billion barrels of oil. During the past several years, the spike in the price of natural gas has had a significant, direct economic impact on all consumers, the US economy, and manufacturing. Residential, commercial and industrial consumers have paid \$111 billion more for natural gas during the past several years when compared to the price paid for the prior 3 year period, an 83 percent increase.

Economic growth, consumer-focused lifestyles, and the emergence of China and India will continue to drive worldwide energy demand. The growing acceptance of climate change and environmental regulations could point to natural gas meeting an increased proportion of the world's fossil fuel consumption.

## **Chapter 2. Index Description**

The ISE-REVERE\_FUM has been created to provide investors with a product allowing them to quickly take advantage of both event-driven news and long term trends in the Natural Gas industry. The securities selected for the index derive a substantial portion of their revenues from the exploration and production of natural gas. Eligible candidates are also screened by stock performance variables (such as P/E and ROE) as well as statistical factors. This is done to optimize the performance of the index and to ensure that the index has significant correlation to the price of natural gas.

The Index uses an equal-weighted methodology due to the diversity in market capitalization size among the component stocks. The resulting uniform weight distribution prevents a few large component stocks from dominating the index and distorting an index return that is representative of an industry sector. Quarterly rebalancing events are used to "re-set" the weighting of each component such that each component has an equal influence on the index performance.

The Index will initially contain 30 different component stocks. Companies may not apply, and may not be nominated, for inclusion in the Index. Companies are added or removed by the ISE and REVERE based on the methodology described herein. Whenever possible, ISE will publicly announce changes to the index on its website at least five trading days in advance of the actual change.

The ISE-REVERE\_FUM is calculated and maintained by Standard & Poor's based on a methodology developed by the International Securities Exchange and Revere Data in consultation with Standard & Poor's.

The ISE-REVERE\_FUM is calculated on a price and total return basis. The price Index is calculated in real-time and disseminated via the Options Price Reporting Authority (OPRA) and market data vendors every day the U.S. equity markets are open. The total return Index is calculated on an end-of-day basis. Both sets of values are freely available on ISE's website, <a href="https://www.iseoptions.com">www.iseoptions.com</a>.

## **Chapter 3. Index Construction**

This chapter outlines and defines the key steps in constructing and calculating the index, including: eligibility requirements, formulas, initial component selection, and special adjustments.

#### 3.1. Base Date and Value

The ISE-REVERE Natural Gas Index has the following base date and value:

Index Base date Base value

ISE-REVERE Natural Gas Index December 29, 2000 25

#### 3.2. Component Eligibility Requirements

All of the following requirements must be met in order for a company to be eligible for inclusion:

- 1. The company issuing the component security must derive a significant portion of its revenue from natural gas exploration and production, as determined by reviewing its financial statements. In the event a company is involved in the exploration and production of crude oil and natural gas, the proved reserves of natural gas shall be converted to Barrels of Oil Equivalent (BOE) using the industry standard conversion of 1 BOE = 6,000 cubic feet of gas. A company is eligible if natural gas accounts for more than 50% of its total proved reserves.
- 2. The component security must be a "reported security" as defined in Rule 11Aa3-1 under the Exchange Act, and its common stock listed on the New York Stock Exchange (NYSE), American Stock Exchange (AMEX), or Nasdaq National Market System (Nasdaq).
- Public float of at least 25% of the stock.
- 4. Must be an operating company and not a closed-end fund, exchange-traded fund (ETF), holding company, investment vehicle, or royalty trust (REIT).

The following market capitalization, liquidity, and weighting concentration requirements must also be satisfied:

- 1. Each component security has a market capitalization of at least \$150 million.
- 2. Trading volume of each component security has been at least one million shares for each of the last six months, except that for each of the lowest weighted component securities in the index that in the aggregate account for no more than 10 % of the weight of the index, trading volume has been at least 500,000 shares for each of the last six months.
- 3. Average daily trading value over the past six months is more than \$1 million.
- 4. No single component security represents more than 24% of the weight of the index.
- 5. The five highest weighted component securities in the index do not in the aggregate account for more than 50% of the weight of the index. This particular requirement will be satisfied at least on the first day of January and July of each year.

The ISE and REVERE will, in most cases, use the quantitative ranking and screening system described herein. However, subjective screening based on fundamental analysis or

other factors may be used, if in the opinion of the ISE and REVERE, certain components should be excluded from the index.

#### 3.3. Float-Adjustment

Components of the ISE-REVERE Natural Gas Index are float-adjusted to reflect the number of shares available to investors according to S&P's proprietary methodology. The float-adjusted number of shares is used during the component eligibility process at initial component selection and at scheduled reviews.

The float-adjusted number of shares for each stock is determined by assigning each stock an availability factor. That factor represents the percentage of shares deemed available (i.e., tradable) on the open market, and is developed by excluding certain types of holdings. Shares may be excluded for three reasons: corporate cross-holdings, private control block holdings, or government holdings. Private control blocks are considered to be any entity acting alone or in concert that possess a holding greater than or equal to 10% of the issue's total capitalization.

#### 3.4. Dividend Treatment

The price indexes do not take normal dividend payments into account. Dividends are accounted for by reinvesting them on a daily basis. ISE-REVERE uses the exdividend date to determine the total daily dividends for each day. Special dividends require an index divisor adjustment (as described in Chapter 4) to prevent such distributions from distorting the price index.

## 3.5. Index Equations

The price indexes are calculated using the following basic equations:

or 
$$I(t) = \frac{\sum_{i=1}^{n} P_{i(t)} \times S_{i(t)}}{D(t)}$$

where:

 $I_{(t)}$  = Index value at time (t)

 $D_{(t)}$  = Divisor at time (t)

n = Number of stocks in the index

t = The time the index is calculated

 $P_{i(t)}$  = Price of stock (i) at time (t)

S<sub>i(t)</sub> = Number of assigned shares of stock (i) at time (t)

The initial index divisor is determined using the following equation:

$$D(o) = \frac{\sum_{i=1}^{n} P_{i(o)} \times S_{i(o)}}{I(o)}$$

where:

 $I_{(0)}$  = Base index value at base date (December 31, 1998)

D<sub>o</sub> = Initial divisor at base date

n = Number of stocks in the index

P<sub>i(o)</sub> = Closing price of stock (i) at base date

 $S_{i(o)}$  = Number of assigned shares of stock (i) at base date

Assigned shares are the number of shares needed for each component, such that the component is equally represented in the index by its weighting.

Changes to the index composition require divisor adjustments in order to retain index continuity before and after specific events (as outlined in Chapter 4 – Index Maintenance). Divisor changes are made according to the following formula:

$$D(t+1) = D(t) \times \frac{\sum_{i=1}^{n} P_{i}(t+1) \times S_{i}(t+1)}{\sum_{i=1}^{n} P_{i}(t) \times S_{i}(t)}$$

where:

 $D_{(t+1)}$  = Divisor after changes are made to the index

 $P_{i(t+1)}$  = Price of each stock after index changes

S<sub>i(t+1)</sub> = Number of assigned shares of each stock after index changes

D<sub>(t)</sub> = Divisor before changes are made to the index

 $P_{i(t)}$  = Price of each stock prior to index changes

 $S_{i(t)}$  = Number of assigned shares of each stock prior to index changes

#### 3.6. Initial Component Selection

The following steps are taken to select the initial components for the ISE-REVERE Natural Gas Index.

- 1. Establish total population of stocks involved in the exploration and production of 'natural gas'. Eliminate stocks whose natural gas proved reserves are less than 50% total proved reserves using BOE.
- Rank all candidate stocks by Price/Earnings ratio in ascending order using the last closing price per share and the trailing twelve month earnings per share.
  Assign a numerical score to each stock based on its rank (e.g., first stock gets a '1').
- 3. Rank all candidate stocks by Price/Book ratio in ascending order using the last closing price per share and the trailing twelve month book value per share (shareholder's equity). Score each stock based on its rank.
- 4. Rank all candidate stocks by Return on Equity in descending order using the last closing stock price per share and trailing twelve month data. Score each stock based on its rank.
- Rank all candidate stocks by their individual correlation to the closing price of the spot-month Henry Hub natural gas futures contract traded on the New York Mercantile Exchange (NYMEX) in descending order. Use daily returns over the past six months. Score each stock based on its rank.
- 6. Establish the final rank of each stock by adding the scores assigned during each ranking process above.
- 7. Remove companies that do not meet the component eligibility requirements.
- 8. If a component has multiple share classes, include the most liquid issue for that company and remove the remaining classes.
- 9. Select the top 30 companies based on final rank.
- 10. Adjust each component's weighting to 1/n, where 'n' equals the number of component stocks in the index.

The index component list is provided in Appendix A.

## **Chapter 4. Index Maintenance**

This chapter describes the circumstances that require index changes, as well as the details on performing those changes.

### 4.1. Divisor Changes

Changes to the Index composition due to corporate actions or component eligibility changes will require Index Divisor adjustments, as follows:

Component change	Adjustment
Component Replacement	Add market value of company to be added, subtract market value for company to be removed
Share Issuance	Add newly issued shares to existing shares outstanding
(when change is ≥ 5%)	
Share Repurchase	Subtract repurchased shares from existing shares outstanding
(when change is ≥ 5%)	
Spinoff*	Subtract the following from the price of the parent company:
	$\left(\frac{\textit{Spinoff stock price}}{\textit{Share exchange ratio}}\right)$
	Adjust the assigned shares such that component's weighting is not changed as a result of the spinoff.
Special Cash Dividend	Subtract special dividend from share price
Rights Offering	Subtract the following from the price of the parent company:
	$\left( \frac{\textit{Price of rights}}{\textit{Rights ratio}} \right)$
	Adjust the assigned shares such that component's weighting is not changed as a result of the rights offering.

Divisor changes are usually made on the date the corporate action becomes effective. For example, ISE and REVERE use the ex-dividend date rather than the payment date to determine when making divisor adjustments.

\*Special note on Spin-offs: If a company being spun off is only trading on a "when-issued" basis, the "when-issued" price will be used to adjust the parent company's closing price.

## 4.2. Details of Share Changes

Stock splits and reverse splits do not require Index Divisor adjustments because the corresponding change to the stock price equally offsets the number of shares outstanding, therefore not affecting the component's market capitalization.

### 4.3. Quarterly Rebalancing and Review

Equal-weighted indexes are rebalanced quarterly in March, June, September, and December each year. Changes are made after the close on the third Friday of those months, and become effective at the opening on the next trading day. Changes are announced on ISE's publicly available website at least five trading days prior to the effective date.

The procedures for performing the quarterly rebalancing are identical to those shown in Chapter 3.6

#### 4.4. Interim component changes

Component changes may occur between review periods if a specific corporate event makes an existing component ineligible. The following events may require a component's replacement:

Event	Action
Merger or acquisition	If a merger or acquisition results in one component absorbing another, the resulting company will remain a component and the absorbed company will be replaced. If a non-component company absorbs a component company, the original component will be removed and replaced.
Spin-off	If a component company splits or spins off a portion of its business to form one or more new companies, the resulting company with the highest market value will remain a component as long as it meets the eligibility requirements. The remaining companies will be evaluated for eligibility and possible addition to the index.
Bankruptcy	A component company will be removed and replaced immediately after bankruptcy filing. Exceptions are made on a case-by-case basis. For example, a security might not be removed immediately when a bankruptcy filing is not a result of operating or financial difficulties.
Delisting	A component company will be removed and replaced immediately after being delisted from its primary market.

ISE and REVERE attempt to maintain a Component Replacement Pool (CRP) for the index at all times for contingency purposes. The CRP contains at least five companies that meet the eligibility requirements and are ranked by float adjusted market capitalization. Components removed from the Index are replaced with those from the CRP in descending order by float adjusted market capitalization.

Whenever possible, interim component changes are announced on ISE's publicly available website five trading days prior to component changes becoming effective.

## 4.5. Unscheduled component weight adjustments

Unscheduled component weight adjustments may occur between review periods if any component accounts for more than 24% of the index weight. The market capitalization of any component representing more than 24% of the index weight will be adjusted such that its new weight is no more than 20%. Whenever possible,

unscheduled component weight adjustments are announced on ISE's publicly available website five trading days prior to the adjustments becoming effective.

## **Chapter 5. Index Calculation and Dissemination**

This chapter summarizes calculation and dissemination practices, quality assurance practices, and the circumstances requiring calculation corrections.

#### 5.1. Price Calculation

Price and total return indexes for the ISE-REVERE\_FUM are calculated by Standard & Poor's. The price index is calculated on a real-time basis, and the total-return Index is calculated and disseminated on an end-of-day basis. The ISE-REVERE\_FUM is calculated using the last traded price for each company in the Index from the relevant exchanges and markets.

Index values are rounded to two decimal places and divisors are rounded to 14 decimal places.

### 5.2. Calculation Frequency and Dissemination

The ISE-REVERE\_FUM price index is calculated on a real-time basis beginning when the first traded price of any of the Index components is received by Standard & Poor's. Prices are delivered to ISE every 15 seconds and subsequently published to the Options Price Reporting Authority at that frequency. Total-return Index values are posted on ISE's publicly available website, www.iseoptions.com.

If trading in a stock is suspended prior to the market opening, the stock's adjusted closing price from the previous day will be used in the Index calculation until trading commences. If trading in a stock is suspended while the relevant market is open, the last traded price for that stock will be used for all subsequent Index calculations until trading resumes.

## 5.3. Input Data

Standard & Poor's uses various quality assurance tools to audit, monitor, and maintain the accuracy of its input data. While every reasonable effort is taken to ensure high standards of data integrity, there is no guarantee against errors. Please refer to the Data Correction section for more detail.

The index closing price is calculated using the closing prices issued by the primary exchange for each component stock in the index. If the primary exchange changes the closing price of a component stock, the new price will be used to calculate the index closing price. A final check of closing prices is done between one hour and one and one half hours after the close of markets. This timeframe may be expanded at S&P's discretion on days where trading volume is unusually large at the close. For example, futures and options expiration dates, and large index rebalancing dates often result in unusually large volume. Only changes received prior to this final check are used in the closing price calculation.

#### 5.4. Data Correction

Incorrect index component data, corporate action data, or Index Divisors will be corrected upon detection. If such errors are discovered within five days of occurrence, they will be corrected that same day. If discovered after five days,

adjustments will be handled on a case-by-case basis depending on the significance of the error and the feasibility of a correction. Announcements will be made on ISE's publicly available website prior to the change becoming effective.

Incorrect intraday index tick data will not be corrected. However, incorrect opening and closing values will be corrected as soon as possible after detection.

# **Appendices**

This section provides additional information related to the ISE-REVERE Natural Gas index in particular as well as changes to this document.

# Appendix A. ISE-REVERE Natural Gas Index Components

As of September 13, 2006

<u>Symbol</u>	Component Name	<u>No.</u>
ABP	ABRAXAS PETE CORP COM	1
APA	Apache Corp.	2
APC	Anadarko Petroleum	3
ATLS	ATLAS AMERICA INC	4
BEXP	Brigham Exploration Co	5
BRG	BG Group (ADR)	6
COG	Cabot Oil & Gas	7
CRK	Comstock Res Inc	8
DVN	Devon Energy Corp.	9
ECA	EnCana Corp. (US)	10
EOG	EOG Resources	11
HAWK	PETROHAWK ENERGY CORP COM	12
KWK	Quicksilver Resources Inc.	13
LINE	Linn Energy LLC	14
NBL	Noble Energy, Inc.	15
NFX	Newfield Exploration	16
NGAS	NGAS RESOURCES INC COM	17
OKE	ONEOK Inc.	18
PETD	Petroleum Development Corp.	19
PPP	Pogo Producing	20
PVA	Penn Virginia	21
ROSE	Rosetta Resources Inc	22
STO	STATOIL ASA (ADR)	23
STR	Questar Corp.	24
SWN	Southwestern Energy	25
THX	Houston Exploration Co, The	26
TMR	Meridian Resource Corp	27
WMB	Williams Cos.	28
XCO	Exco Resources Inc	29
XEC	Cimarex Energy Co.	30

# **Appendix B. Document Change History**

A history of significant changes to this document is shown in the table below.

Issue	Date	Change
0.1	August 9, 2006	First draft
0.2	August 24, 2006	Portfolio established
1.0	September 13, 2006	Final version

