



New York  
Mercantile Exchange

NYMEX/COMEX: Two divisions, one marketplace

RISK MANAGEMENT WITH  
NATURAL GAS FUTURES  
AND OPTIONS



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# INTRODUCTION

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## *A Maturing Market*

U.S. natural gas markets have undergone a remarkable transformation in recent years. After decades of rigid regulation, the natural gas industry is now free to compete on the wholesale level and, in a growing number of states, at the retail level. The result has been a substantial increase in the production of natural gas, far-reaching changes in the structure of the industry, and the growth of a large and fluid market in natural gas futures and options to cope with pricing uncertainties. In coming years, promising new technology which can change natural gas into easily transportable oil products may transform the industry once again.

Prior to the enactment of the Natural Gas Policy Act of 1978, the price of gas in the interstate market was stable all along the distribution chain. Interstate market sales were subject to government oversight regarding prices, supplies, and vendor-customer relations at every step of the way, from well-head to burnertip. Producers and distributors faced real risks, but not the challenges of competition.

The extensive regulations were intended to protect consumers by ensuring adequate supplies at fair prices. By the mid 1970s, however, the regulations were no longer doing the job. An acute supply shortage had developed, demonstrating that government regulation was not accomplishing its objective. Believing that competition in a free market was a superior alternative, Congress enacted the Natural Gas Policy Act of 1978, with the major feature of phased decontrol of wellhead prices.

Price decontrol was not sufficient, however, to ensure a free market because, at the time, natural gas pipelines had no obligation to transport gas they did not own. This led the Federal Energy Regulatory Commission to implement rules making it attractive for pipelines to transport gas for third parties.

That decision was the key step in creating a free market. It was only then that the growing supply of gas flowing in response to free market pricing at the wellhead, along with the ability to move that gas where desired, led to increased competition and the expansion of spot market transactions. Increased competition, in turn, led to considerable changes within the industry and to the start of trading in natural gas futures.

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## *Marketers — A New Class of Market Participant*

One outgrowth of the new competitive environment was the rise of a new class of participant in the industry — the marketer. In earlier years, when the gas industry was regulated and prices closely controlled, there was no opportunity for competitive pricing or market innovation. Deregulation changed that. Marketers stepped in, functioning as wholesalers, brokers, and aggregators. They purchase gas from producers and find buyers, or they obtain purchase commitments and find sellers. Sometimes, they simply broker the gas. Other times, they pull together or aggregate enough end-users such as gas utilities (also known as local distribution companies or LDCs) so that they can negotiate lower prices based on volume. Frequently, they arrange transportation of the gas as well. Accordingly, they serve an important role in adding liquidity to the market, particularly for smaller producers and industrial consumers.

Another outgrowth of the new competitive market for gas was the need for futures and options trading to cope with the price uncertainty of a free market. Price uncertainty creates risks and opportunities. Futures and options markets provide a forum for commercial interests in a commodity to hedge against price risk by transferring that risk to those more willing and able to bear it, or to those commercial interests with inverse risk profiles. What's more, an active futures market provides a readily available, widely accepted reference price for the underlying commodity, thereby improving the efficiency of the overall market.

The New York Mercantile Exchange worked with a team of natural gas industry representatives to develop natural gas futures and options that address the needs of the industry and are attractive to investors. Within a few short years of the launch of the world's first natural gas futures contract in April 1990, futures became an integral part of the business for market participants from all sectors of the gas industry — from producers to end-users. Eventually the futures contract allowed the Exchange to provide the industry with another risk management tool — a natural gas options contract.

This brochure provides an overview of the natural gas market, an explanation of the risks faced by the various market participants, a review of some of the ways futures and options can be used to manage these risks, and, as an insert in the back cover, an updated summary of contract specifications.

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## *Two Decades Since Deregulation*

The development of the spot market is probably the best measure of the radical structural change that has swept this industry. In 1982, a spot market for natural gas hardly existed; by the late 1980s, it accounted for about 80% of the entire gas market. By 1992, spot transactions had fallen back to 35% to 40% of the overall market. This is a healthy development because spot markets act as price setters at the margin, while long-term contracts generally provide for more stable pricing over time. Unlike their predecessors, however, the new generation of long-term contracts generally are not fixed-price contracts; they commonly provide for some form of price indexing, the foundation of which is the spot market.

The spot market also acts as a default market. If one party to a long-term contract is unable to buy or sell the required quantity of gas in any month, his counterparty knows there is a market outlet to which he can temporarily turn.

Another important measure of the strength of the free gas market is the growth of pipeline contract carriage — shipments of gas in which the pipelines simply act as transportation agents and have no equity stake in the gas. In 1983, only 5% of the gas that interstate pipelines delivered was contract carriage gas; the rest was their own. A decade later, contract carriage comprised almost 90% of pipeline deliveries. The figure today is 100%.

In July 1989, President Bush signed a gas price-decontrol bill that finally ended 35 years of wellhead price controls although, for all practical purposes, those price controls already had little influence on the market by then. In 1992, FERC issued Order 636 which effectively unbundled interstate pipeline transportation services from all other services the pipeline companies might offer, and forbade discrimination among shippers. Among other things, this created a secondary market in pipeline capacity, making the transportation of gas a more important component of end price.

The transition from total regulation to free-market competition is now complete at the wholesale level and taking place at the retail level in more and more states where small commercial and residential customers are being offered "open access" to competitive gas suppliers.