

# 'Enron moment': Insiders sound alarm amid a natural gas rush

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**The word in the world of independents is that the shale plays are just giant Ponzi schemes and the economics just do not work,' analyst writes**

**By**  
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**The New York Times**

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Natural gas companies have been placing enormous bets on the wells they are drilling, saying they will deliver big new source of energy for the United States.

But the gas may not be as easy and cheap to extract from shale formations deep underground as the companies at hundreds of industry e-mails and internal documents and an analysis of data from thousands of wells.

In the e-mails, energy executives, industry lawyers, state geologists and market analysts voice skepticism about whether companies are intentionally, and even illegally, overstating the productivity of their wells and the size of e-mails also suggest a view that is in stark contrast to more bullish public comments made by the industry, in mu have raised doubts about previous financial bubbles.

“Money is pouring in” from investors even though shale gas is “inherently unprofitable,” an analyst from PNC We [investment](#) company, wrote to a contractor in a February e-mail. “Reminds you of dot-coms.”

“The word in the world of independents is that the shale plays are just giant Ponzi schemes and the economics ju from IHS Drilling Data, an energy research company, wrote in an e-mail on Aug. 28, 2009.

Company data for more than 10,000 wells in three major shale gas formations raise further questions about the i undoubtedly a vast amount of gas in the formations. The question remains how affordably it can be extracted.

The data show that while there are some very active wells, they are often surrounded by vast zones of less-product cost more to drill and operate than the gas they produce is worth. Also, the amount of gas produced by many of th much faster than initially predicted by energy companies, making it more difficult for them to turn a profit over th

If the industry does not live up to expectations, the impact will be felt widely. Federal and state lawmakers are cor increasing subsidies for the natural gas business in the hope that it will provide low-cost energy for decades to cor

[▶ Video: The battle over natural gas drilling](#)

But if natural gas ultimately proves more expensive to extract from the ground than has been predicted, landown could see their [investments](#) falter, while consumers will pay a price in higher electricity and home heating bills.

**Environmental implications**

There are implications for the environment, too. The technology used to get gas flowing out of the ground — called hydrofracking — can require over a million gallons of water per well, and some of that water must be disposed of or recycled. Some of the water is contaminated by the process. If shale gas wells fade faster than expected, energy companies will have to drill more often, resulting in more toxic waste.

The e-mails were obtained through open-records requests or provided to The New York Times by industry consultants they believe that the public perception of shale gas does not match reality; names and identifying information were redacted to protect people, who were not authorized to communicate publicly. In the e-mails, some people within the industry voice their concerns.

“And now these corporate giants are having an Enron moment,” a retired geologist from a major oil and gas company wrote in an e-mail about other companies invested in shale gas. “They want to bend light to hide the truth.”

Others within the industry remain optimistic. They argue that shale gas economics will improve as the price of gas rises and demand for gas grows with help from increased federal subsidies being considered by Congress. “Shale gas success is inevitable,” Steven C. Dixon, executive vice president of Chesapeake Energy, said at an energy industry conference in 2008. “There is no skepticism about well performance.”

### **Studying the data**

“I think we have a big problem.”

Deborah Rogers, a member of the advisory committee of the Federal Reserve Bank of Dallas, recalled saying that in 2008 she told a senior economist at the Reserve, Mine K. Yucel. “We need to take a close look at this right away,” she added.

A former [stockbroker](#) with Merrill Lynch, Ms. Rogers said she started studying well data from shale companies in 2008 in a speech by the chief executive of Chesapeake, Aubrey K. McClendon. The math was not adding up, Ms. Rogers said. “The wells were petering out faster than expected.”

“These wells are depleting so quickly that the operators are in an expensive game of ‘catch-up,’ ” Ms. Rogers wrote in 2009, to a petroleum geologist in Houston, who wrote back that he agreed.

“This could have profound consequences for our local economy,” she explained in the e-mail.

Fort Worth residents were already reeling from the sudden reversal of fortune for the natural gas industry.

In early 2008, energy companies were scrambling in Fort Worth to get residents to lease their land for drilling as “monster wells.” Billboards along the highways stoked the boom-time excitement: “If you don’t have a gas lease, get one now.” Companies were in a fierce bidding war for drilling rights, offering people bonuses as high as \$27,500 per acre for signing leases.

The actor Tommy Lee Jones signed on as a pitchman for Chesapeake, one of the largest shale gas companies. “The benefits include new jobs and capital investment and royalties and revenues that pay for public roads, schools and television advertisement about drilling in the Barnett shale in and around Fort Worth.”

To investors, shale companies had a more sophisticated pitch. With better technology, they had refined a “manufacture” that would allow them to drop a well virtually anywhere in certain parts of a shale formation and expect long-lasting production.

### **Wall Street holy grail**

For Wall Street, this was the holy grail: a low-risk and high-profit proposition. But by late 2008, the recession took its toll. Natural gas prices plunged by nearly two-thirds, throwing the drilling companies’ business model into a tailspin.

In Texas, the advertisements featuring Mr. Jones disappeared. Energy companies rescinded high-priced lease offers which prompted class-action lawsuits. Royalty checks dwindled. Tax receipts fell.

The impact of the downturn was immediate for many.

“Ruinous, that’s how I’d describe it,” said the Rev. Kyeve Tatum, president of the Fort Worth chapter of the Southern Baptist Conference.

Mr. Tatum explained that dozens of black churches in Fort Worth signed leases on the promise of big money. Instead that their land may no longer be tax exempt even though they had yet to make any royalties on the wells, he said.

That boom-and-bust volatility had raised eyebrows among people like Ms. Rogers, as well as energy analysts and investors looking closely at the data on wells’ performance.

In May 2010, the Federal Reserve Bank of Dallas called a meeting to discuss the matter after prodding from Ms. F. Kenneth B. Medlock III, an energy expert at Rice University, who described a promising future for the shale gas industry. When he was done, Ms. Rogers peppered him with questions.

Might growing environmental concerns raise the cost of doing business? If wells were dying off faster than predicted, would more need to be drilled to meet projections?

Mr. Medlock conceded that production in the Barnett shale formation — or “play,” in industry jargon — was indeed soon to decline.

“Activity will shift toward other plays because the returns there are higher,” he predicted. Ms. Rogers turned to the other attendees if they shared her skepticism, but she said she saw only blank stares.

### **Bubbling doubts**

Some doubts about the industry are being raised by people who work inside energy companies, too.

“Our engineers here project these wells out to 20-30 years of production and in my mind that has yet to be proven at Chesapeake in a March 17 e-mail to a federal energy analyst. “In fact I’m quite skeptical of it myself when you see a year of production.”

“In these shale gas plays no well is really economic right now,” the geologist said in a previous e-mail to the same analyst. “They are all losing a little money or only making a little bit of money.”

Around the same time the geologist sent the e-mail, Mr. McClendon, Chesapeake’s chief executive, told investors, “We’re producing natural gas.”

In September 2009, a geologist from ConocoPhillips, one of the largest producers of natural gas in the Barnett shale, told a colleague that shale gas might end up as “the world’s largest uneconomic field.” About six months later, the company’s CEO, Richard Mulva, described natural gas as “nature’s gift,” adding that “rather than being expensive, shale gas is often the low-cost energy source.” In the e-mail, John C. Roper, a spokesman for ConocoPhillips, said he absolutely believed that shale gas is economic.

A big attraction for investors is the increasing size of the gas reserves that some companies are reporting. Reserve gas that a company says it can feasibly access from its wells — are important because they are a central measure of a company’s value.

Forecasting these reserves is a tricky science. Early predictions are sometimes lowered because of drops in gas prices. Intentionally overbooking reserves, however, is illegal because it misleads investors. Industry e-mails, mostly from language from oil and gas executives questioning whether other energy companies are doing just that.

The e-mails do not explicitly accuse any companies of breaking the law. But the number of e-mails, the seniority and variety of positions they hold and the language they use — including comparisons to Ponzi schemes and attempts to suggest that questions about the shale gas industry exist in many corners.

“Do you think that there may be something suspicious going with the public companies in regard to booking shale gas from Ivy Energy, an [investment firm](#) specializing in the energy sector, wrote in a 2009 e-mail.

A former Enron executive wrote in 2009 while working at an energy company: “I wonder when they will start tell me not what they thought they were going to be?” He added that the behavior of shale gas companies reminded him of what he worked at Enron.

Production data, provided by companies to state regulators and reviewed by The Times, show that many wells are producing less than industry expected. In three major shale formations — the Barnett in Texas, the Haynesville in East Texas and the Longview across Arkansas — less than 20 percent of the area heralded by companies as productive is emerging as likely to be profitable under market conditions, according to the data and industry analysts.

Richard K. Stoneburner, president and chief operating officer of Petrohawk Energy, said that looking at entire shale gas fields because some companies drilled only in the best areas or had lower costs. “Outside those areas, you can drill a lot of wells that do not meet expectations,” he added.

Although energy companies routinely project that shale gas wells will produce gas at a reasonable rate for anywhere from 20 to 30 years, companies have been making such predictions based on limited data and a certain amount of guesswork, since shale gas production is still in its early practice.

Most gas companies claim that production will drop sharply after the first few years but then level off, allowing many wells to be profitable for decades.

Gas production data reviewed by The Times suggest that many wells in shale gas fields do not level off the way many companies expect, but instead decline steadily.

“This kind of data is making it harder and harder to deny that the shale gas revolution is being oversold,” said Art Goldfarb, a geologist who worked for two decades at Amoco and has been one of the most vocal skeptics of shale gas economics.

The Barnett shale, which has the longest production history, provides the most reliable case study for predicting future production. Data suggest that if the wells’ production continues to decline in the current manner, many will become financially unprofitable within a few years.

A review of more than 9,000 wells, using data from 2003 to 2009, shows that — based on widely used industry estimates of the price of gas and the cost of drilling and operating a well — less than 10 percent of the wells had recouped their estimated costs by the time they were seven years old.

Terry Engelder, a professor of geosciences at Pennsylvania State University, said the debate over long-term well profitability is not resolved. The Haynesville shale has not lived up to early expectations, he said, but industry projections have become more realistic.

wells in the Marcellus shale, which stretches from Virginia to New York, are outperforming expectations.

**Sense of confidence**

Many people within the industry remain confident.

“I wouldn’t worry about these shale companies,” said T. Boone Pickens, the oil and gas industry executive, adding rise, shale gas companies will make good money.

Mr. Pickens said that technological improvements — including hydrofracking wells more than once — are already cost-effective, which is why some major companies like ExxonMobil have recently bought into shale gas.

Shale companies are also adjusting their strategies to make money by focusing on shale wells that produce lucrati butane, in addition to natural gas.

Asked about the e-mails from the Chesapeake geologist casting doubt on company projections, a Chesapeake spol company was fully confident that a majority of wells would be productive for 30 years or more.

David Pendery, a spokesman for IHS, added that though shale gas prospects had previously been debated by man years costs had fallen and technology had improved.

Still, in private exchanges, many industry insiders are skeptical, even cynical, about the industry’s pronouncemen an official from Schlumberger, an oil and gas services company, wrote in a July 2010 e-mail to a former federal re, in Europe, where some United States shale companies are hunting for better market opportunities.

“Looks like crap,” the Schlumberger official wrote about the well’s performance, according to the regulator, “but of ‘potential’ and make some money on it.”

“Always a greater sucker,” the e-mail concluded.

*Robbie Brown contributed reporting from Atlanta.*

*This story, “Insiders Sound an Alarm Amid a Natural Gas Rush,” originally appeared in The New York Times.*

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