



Landowners get windfalls from natural gas drilling

By Paul Davidson, USA TODAY
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FORT WORTH — Pastor Elvis Bowman of the Greater Mount Tabor Christian Center, an aging, homespun church in a low-income neighborhood here, has a new title: energy mogul.

By letting Chesapeake Energy drill wells and pump natural gas from beneath its 50 acres, the church has pocketed tens of thousands of dollars and stands to clear tens of thousands more in royalties each month after drilling begins. The money will help pay for a new \$8 million church and performance center, a \$12 million mixed-use development nearby and a slate of community programs to help the less fortunate.



"It's been an unexpected treasure," says Bowman, a preacher with a gravelly voice and infectious cackle. "I know without a doubt it was divine."

In this sprawling city and surrounding area, companies are siphoning natural gas from under homes, churches, schools and golf courses in an urban drilling frenzy that's showering property owners with unexpected windfalls. The initiative takes another leap in a few months when drilling begins in Fort Worth's revitalized downtown.

The region, the nation's most active drilling basin, is the epicenter of a natural gas boom rippling across the USA. Companies are boring wells in the unlikeliest of places, transforming large swaths of Texas, Oklahoma, Arkansas, the Rockies, and, most recently, rural Pennsylvania. They're building a vast network of pipelines to transport the gas to population centers, tanks to store the surplus and terminals to house liquefied natural gas (LNG) from overseas.

Much of the infrastructure is springing up in the Gulf of Mexico, which hasn't seen such

a building flurry in decades, says Russell Braziel, managing director of Bentek Energy. In Texas, "They're drilling like banshees and finding gas like banshees," he says. "This is fabulous for the consumer."

The drilling boosted U.S. natural gas production 3% last year, helping reduce residential natural gas prices for heating and other uses 5.4%, the Energy Information Administration says.

Natural gas heats about half of U.S. homes and fuels 20% of U.S. power plants. It's also a feedstock for products such as plastics, fertilizer, antifreeze and fabrics.

With oil prices soaring and coal losing favor amid concerns about global warming, natural gas has emerged as the fuel of choice in the USA.

Natural gas prices have risen sharply in recent years. But the drilling boom, at least for now, is tempering consumers' costs as oil prices march toward \$130 a barrel. The benchmark spot price of natural gas is about \$11 for 1,000 cubic feet. That's far less expensive than oil, even allowing that it takes about 6,000 cubic feet of gas to match a barrel of oil's energy output, measured in British thermal units (Btu).

Driving the U.S. appetite for gas is the power industry. Coal fires 50% of power plants, but it's the largest emitter of global-warming gases.

Most utilities are turning to natural gas generators that emit half as much carbon dioxide, are relatively inexpensive to build and can be finished quickly. Natural gas use by the power industry grew 10% last year.

The surging demand, along with 2005 hurricanes that shut down production facilities in the Gulf, helped push up prices in recent years. Since 2002, natural gas prices have more than tripled.

Here's the good news: The rising prices have enticed companies to unearth new supplies, moderating price hikes. Analyst Robert Ineson of Cambridge Energy Research Associates expects natural gas prices to fall to \$8 per 1,000 cubic feet later this year and hover at about \$7 through 2012.

Several years ago, with recoverable natural gas reserves being depleted in traditional fields such as the Gulf, the industry started scrambling. Companies such as Sempra Energy began planning terminals to accept LNG from overseas.

At the same time, as natural gas prices crept past \$6 per 1,000 cubic feet, it became economical for companies to develop new drilling methods to extract gas deeply embedded in formations of shale rock. Rigs drill down about 7,000 feet, then make a right angle and bore horizontally up to 5,000 feet, exposing about 10 times as much rock. Workers free trapped gas by pumping in water to form cracks in the shale and sand to

hold the fissures open, letting gas flow up.

"It's made millions of acres productive," says Chesapeake Energy spokesman Jim Gipson.

In Fort Worth, horizontal drilling has allowed rigs to be placed up to a mile from neighborhoods where gas will be tapped. Nearly 1,000 wells have been drilled in the city, the heart of a 5,000-square-mile basin, known as the Barnett Shale, that skirts Dallas. Like mini-Eiffel Towers, the 130-foot-tall latticework rigs can occasionally be spotted around town, emitting an airplane-engine hum punctuated by screeches and periodic clouds of smoke. More common are the 6-foot-high wellheads that remain after drilling is done in about 30 days. Billboards exhort commuters to "Explore the Barnett Shale."

"I've never seen a development of this magnitude in an urban area," says Larry Dale, CEO of Dale Resources, a production company that leases property in Fort Worth for Chesapeake.

Dallas/Fort Worth International Airport sports five rigs after leasing the right to drill on its 18,000 acres for \$186 million plus royalties. The city of Fort Worth expects to rake in about \$1 billion in the next 20 years for leasing its property. Property owners these days typically get a signing bonus of at least \$17,000 per acre and 25% of monthly revenue.

"It has, indeed, floated everyone's boat higher," says Fort Worth Mayor Mike Moncrief.

Across town, the Barnett Shale — which surrenders 3 billion cubic feet of gas a day, 5% of U.S. consumption — inevitably seeps into conversations. As Pastor Bowman concludes a visit with Maureen and R.V. Castle, who live across the street in a small clapboard house, Maureen exclaims, "I want to see that hole in the ground so I can see that (new) church going up!"

Denise and Lloyd Stephens, who leased the mineral rights under their southwest Fort Worth house, plan to invest the \$4,200 signing bonus into their direct-sales nutrition business. The \$150 or so they expect to earn in monthly royalties will help pay their property taxes. "We were thrilled," Denise says. "This was pennies from heaven. God put shale below us."

Not everyone's happy

The drilling has also rankled some. Two wells were drilled about 600 feet from the backyard of Brenda and Gary Hogan. "Twenty-four hours a day you've got noise and bright lights," as well as a parade of trucks that deliver and pick up water, Brenda says.

The rigs are gone now, but when the Hogans look past their backyard to a once-bucolic pasture, they see two round green tanks that separate the gas from water. Noting they earned just a \$550 signing leasing bonus and expect about \$50 a month in royalties, Gary adds, "It's not worth it."

Elsewhere, companies are borrowing Texas drilling techniques to tap an even bigger potential bounty in an Appalachian Mountain rock called the Marcellus Shale. Since 2004, about 35 companies have spent \$4 billion drilling in a region encompassing Pennsylvania, western New York, Ohio and West Virginia, at first with little success.

In the past six months, Range Resources, the No. 1 player in the area, has hit 10 good wells in Pennsylvania, revitalizing the effort, says Range CEO John Pinkerton. Bonuses to lease land from farmers and others in the largely rural area have risen to \$2,500 an acre from \$300 in February, says Tom Murphy of the Penn State cooperative extension. Penn State geologists estimate the Marcellus contains at least 100 trillion cubic feet of gas in a 53,000-square-mile area, about four times the Barnett basin's and enough to supply the USA for about five years.

The Marcellus is especially valuable because it's in the Northeast, where a pipeline bottleneck has constrained supplies and nudged up natural gas prices.

To distribute all the new reserves, the industry is ramping up construction of pipelines to ferry gas to population centers. Last year, a record 14.5 billion cubic feet of pipeline capacity was added in the USA, the EIA says. Much of it transports gas from Texas to a Louisiana hub where it's dispersed to the Southeast, Northeast and Midwest.

Kinder Morgan, Sempra Energy and ConocoPhillips are building a \$5 billion, 1,679-mile line from the Rocky Mountains basin in Colorado to Clarington, Ohio.

It's the largest pipeline project in the continental USA in the past 25 years. The Rockies Express, slated to be fully operating early next year, will largely carry gas to New York and other Northeast markets.

The increased flow will likely come at the expense of Western residents. As production ramped up in the Rockies last year without a similar increase in pipeline capacity, natural gas prices in Colorado fell as low as a nickel per 1,000 cubic feet, enough gas to heat an average house for two days. That led to a 20% drop in heating bills for customers of Xcel Energy, says spokesman Mark Stutz. But the opening of new pipelines has pushed local prices higher, and the Rockies Express could mean another 35% surge next winter.

Gaps in demand that can't be met by domestic reserves are supposed to be filled by LNG imports. In countries with plentiful supplies, such as Qatar and Angola, natural gas is chilled to minus 260 degrees, turning it into a liquid that's shipped overseas in tankers in 1/600th of the space. Shipments go to terminals in Asia, Europe and the USA that store the liquid in huge stainless-steel tanks, then convert it back to gas that's pumped into pipelines. The USA has long had four terminals, and LNG makes up 3% of U.S. gas supplies.

Foreseeing depleted domestic reserves, companies a few years ago planned a flurry of new LNG ports. Four opened recently and three more are slated by the end of 2009.

Another 40 or so have been proposed; only a handful are expected to be built.

Changed outlook

Several years ago, EIA expected LNG to make up 20% of U.S. gas supplies by 2025. But that forecast has been halved, and little LNG is being delivered.

Terminals are at 50% capacity and expected to remain there for several years, partly because high building costs have discouraged construction of overseas liquefaction facilities, Ineson says. Also, producers are shipping most LNG to Asia and Europe, where customers are paying up to double U.S. rates.

The situation can partly be blamed on the domestic plenty. Abundant U.S. supplies should continue to temper prices and make it tough to attract LNG imports, says analyst Bob Linden of Pace Energy.

The low prices are also deterring energy giants from planning enough LNG production plants overseas, Ineson says. That could lead to a crunch, and higher prices, by 2013, when U.S. thirst for natural gas is likely to outpace domestic stock and there won't be enough LNG to bridge the gap.

"The surprise is that LNG is not turning out to be as big as we expected," Ineson says. "But domestic supply is turning out to be better."