'Fracking' raises hope for onshore oil boom

Clifford Krauss New York Times, 5-29-11

CATARINA, Texas -- Until last year, the 17-mile stretch of road between this forsaken South Texas village and the county seat of Carrizo Springs was a patchwork of derelict gasoline stations and rusting warehouses.

Now the region is in the hottest new oil play in the country, with giant oil terminals and sprawling RV parks replacing fields of mesquite. More than a dozen companies plan to drill up to 3,000 wells around here in the next 12 months.

The Texas field, known as the Eagle Ford, is just one of about 20 new onshore oil fields that advocates say could collectively increase the nation's oil output by 25 percent within a decade -- without the dangers of drilling in the deep waters of the Gulf of Mexico or the delicate coastal areas off Alaska.

Blasting

There is only one catch: the oil from the Eagle Ford and similar fields of tightly packed rock can be extracted only by using hydraulic fracturing, a method that uses a high-pressure mix of water, sand and hazardous chemicals to blast through the rocks to release the oil inside.

The technique, also called fracking, has been widely used in the last decade to unlock vast new fields of natural gas, but drillers only recently figured out how to release large quantities of oil, which flows less easily through rock than gas. As evidence mounts that fracking poses risks to water supplies, the federal government and regulators in various states are considering tighter regulations on it.

Worth the risk?

The oil industry says any environmental concerns are far outweighed by the economic benefits of pumping previously inaccessible oil from fields that could collectively hold two or three times as much oil as Prudhoe Bay, the Alaskan field that was the last great onshore discovery. The companies estimate that the boom will create more than 2 million jobs, directly or indirectly, and bring tens of billions of dollars to the states where the fields are located, which include traditional oil sites like Texas and Oklahoma, industrial stalwarts like Ohio and Michigan and even farm states like Kansas.

"It's the one thing we have seen in our adult lives that could take us away from imported oil," said Aubrey McClendon, chief executive of Chesapeake Energy, one of the most aggressive drillers. "What if we have found three of the world's biggest oil fields in the last three years right here in the U.S.? How transformative could that be for the U.S. economy?"

The oil rush is already transforming this impoverished area of Texas near the Mexican border, doubling real estate values in the past year and filling restaurants and hotels.

"That's oil money," said Bert Bell, a truck company manager, pointing to the new pickup truck he bought for his wife after making $525,000 leasing mineral rights around his family's mobile home. "Oil money just makes life easier."

Increased output

Based on the industry's plans, shale and other "tight rock" fields that now produce about half a million barrels of oil a day will produce up to 3 million barrels daily by 2020, according to IHS CERA, an energy research firm. Oil companies are investing an estimated $25 billion this year to drill 5,000 oil wells in tight rock fields, according to Raoul LeBlanc, a senior director at PFC Energy, a consulting firm.

"This is very big and it's coming on very fast," said Daniel Yergin, chairman of IHS CERA. "This is like adding another Venezuela or Kuwait by 2020, except these tight oil fields are in the United States."

Results

In the most developed shale field, the Bakken field in North Dakota, production has leaped to 400,000 barrels a day today from a trickle four years ago. Experts say it could produce as much as 1 million barrels a day by the end of the decade.

The Eagle Ford, where the first well was drilled only three years ago, is already producing more than 100,000 barrels a day and could reach 420,000 by 2015, almost as much as Ecuador, according to Bentek Energy, a consultancy.

The shale oil boom comes as production from Prudhoe Bay is declining and drilling in the Gulf of Mexico is being more closely scrutinized after last year's Deepwater Horizon disaster.

What makes the new fields more remarkable is that they were thought to be virtually valueless only five years ago. "Everyone said the oil molecules are too large to flow in commercial quantities through these low-quality rocks," said Mark G. Papa, chief executive of EOG Resources.

EOG began quietly buying the rights to thousands of acres in the Bakken and Eagle Ford fields after an EOG engineer concluded that the techniques used to extract natural gas from shale -- fracking, combined with drilling horizontally through layers of rocks -- could be used for oil. Chesapeake and a few other independents quickly followed. Now the biggest multinational oil companies, as well as Chinese and Norwegian firms, are investing billions of dollars in the fields.

The new drilling makes economic sense as long as oil prices remain above $60 a barrel, according to oil companies. At current oil prices of about $100 a barrel, shale wells can typically turn a profit within eight months -- three times faster than many traditional wells.

But water remains a key issue. In addition to possible contamination of surface and underground water from fracking fluids, the sheer volume of water required poses challenges, especially in South Texas, which faces a severe drought and rapidly diminishing water levels in the local aquifer.

At the rate wells are being drilled, "there's definitely going to be a problem," said Bay Laxson, a local water official.

Dave Thompson, regional production superintendent for the oil company SM Energy said the industry knew water issues were "an Achilles' heel." He said his company was building a system to reuse water in the field.

But unlike Pennsylvania and New York, where fracking for natural gas has produced organized opposition, the oil industry has been mostly welcomed in western and southern states.

Thanks to the drilling boom, the recession bypassed North Dakota entirely. Here in Dimmit County, Texas, the unemployment rate has fallen in half, and sales tax receipts are up 70 percent this year, allowing the county to hire more police officers and buy sanitation and road repair equipment.

"In my lifetime, this is the biggest thing I've ever seen," said Jose Gonzalez, 78, a retired teacher and son of migrant farm workers, who leased mineral rights to Chesapeake for $27,000 and sold another plot for $100,000 to a company building an RV park for oil workers. "You can see I'm happy."