THE WALL STREET JOURNAL.

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Shale Drillers' Latest Problems: Hog Manure and Chicken Guts

New facilities that turn livestock, poultry waste into biogas are creating headwind for shale gas producers who are dialing back production

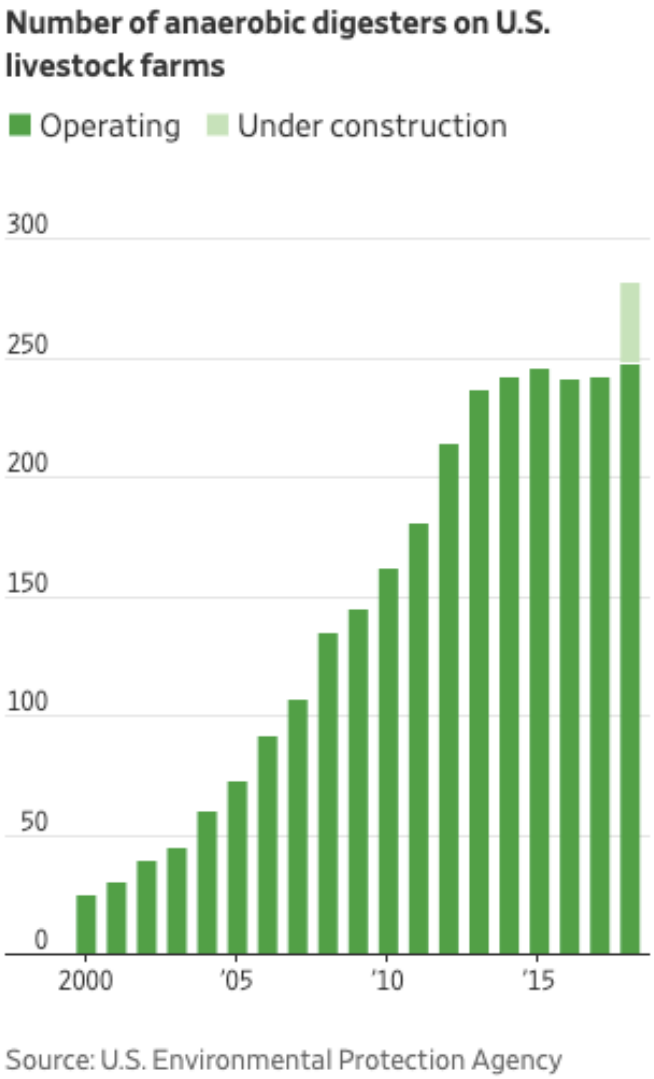
An anaerobic digestion facility operated by Bioenergy DevCo. The facility breaks down organic waste into usable fuel and fertilizer. PHOTO: BIOENERGY DEV CO

By Ryan Dezember
Updated Nov. 22, 2019 3:32 pm ET

It isn't just Appalachian shale drillers that are swamping the natural-gas market. Chicken slaughterhouses, pig farms, expired yogurt and leftover bits from your last meal are contributing to the glut.

A new batch of projects around the country promise to add so-called renewable natural gas to the supply of methane that is used to produce much of the country's electricity, heat homes and fuel buses.

Anaerobic digesters, which break down organic waste into usable fuel and fertilizer, are being built among the chicken houses on the Delmarva Peninsula, on the site of a defunct oil refinery in Philadelphia to be filled with old food and in a remote part of Utah to collect fumes from a hog-manure lagoon.



Capturing methane that would otherwise seep into the atmosphere reduces greenhouse gases, but the added gas supply creates another headwind for drillers who are already dialing back production to save themselves amid a years long slump in prices.

U.S. natural-gas futures for December closed 3.8% higher on Friday at $2.665 per million British thermal units. Yet the price is down 38% from the same time last year on record production volumes, robust stockpiles and forecasts for milder-than-usual winter weather.

Though renewable natural gas, also known as biogas, is usually more expensive than the fuel extracted from shale formations—and often subsidized—it has appeal to utilities, municipalities and others. That is because it can be used to meet carbon-reduction mandates and goals as well as to create low-carbon fuel standard credits, which have value and can be traded.

Most biogas is produced at landfills and wastewater treatment plants and is often used to generate electricity on site. Facilities fed by livestock and poultry waste are a growing source of gas that can be pumped straight into natural-gas pipelines, though. Producing pipeline-quality gas from manure and meat-processing byproducts is particularly attractive to investors because of the significant carbon reductions of doing so, which boosts the value of the corresponding low-carbon fuel standard credits, according to Bank of America Merrill Lynch analysts.

Though biogas production is only about 1.1 billion cubic feet a day—equal to about 1% of total U.S. gas production—output is growing at a clip of about 4% a year, the analysts wrote in a recent report. “Any biogas growth adds to the already oversupplied natural gas market,” they said.

Last year there were 282 anaerobic digesters operating or under construction at U.S. livestock farms, according to the Environmental Protection Agency. Several more of the dome-topped and microbe-filled cylinders are in the works.

Among them: a facility on Delaware’s Delmarva Peninsula, where there are nearly 5,200 chicken houses and more than 4 billion pounds of chicken were processed last year. Bioenergy DevCo., a Maryland concern that recently bought an Italian operator of anaerobic digesters with private-equity money, said Thursday that it is building one amid the Delaware chicken houses. The facility will break down the sludge, fat and offal supplied by Perdue Farms Inc.’s nearby processing operations.

“We don’t consider this material waste, we consider it a commodity,” said Steve Levitsky, Perdue’s vice president of sustainability.

The process will yield gas as well as a fertilizer that can be sold to farmers or bagged and offered at garden centers.

“It’s a cow’s stomach on an industrial scale,” said Shawn Kreloff, Bioenergy’s chief executive.

Mr. Kreloff expects the facility to produce about 350,000 MMBtus of gas annually when it is operational. Bioenergy is developing a similar facility near the Maryland Food Center, a 400-acre market near Baltimore.

Power producer Dominion Energy Inc. and Smithfield Foods Inc. have even more ambitious plans for the manure lagoons at the latter’s hog farms. The companies last month said they would enlarge to $500 million their existing pact to build anaerobic digesters fed by Smithfield farms around the country.

The first, in Milford, Utah, is operational and work is under way to connect it to distribution pipelines. Gas should be flowing from the manure lagoons and into the grid by spring, said Dominion spokesman Aaron Ruby. It is expected to produce enough gas to power about 3,000 homes a day. The companies said similar facilities are planned in Arizona, Virginia, North Carolina and California.

Once they are all operational, by 2029, they would produce about five billion cubic feet of gas annually, Mr. Ruby said.

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