CIVIL EATS

Are Biogas Subsidies Benefiting the Largest Industrial Animal Farms?

BY LISA HELD SEPTEMBER 20, 2021

A few years ago, farmers under contract with Smithfield Foods began building an industrial hog facility four miles north of David Remkes' home in Flowell, Utah. Not long after, a developer submitted a proposal with the County Commission for another operation in the same area that would house more than 30,000 hogs at a time.

"I thought [Smithfield] would never come here. It seemed like everyone I knew didn't want hogs here," said Remkes, a house remodeler who has lived in Millard County, about 150 miles southwest of Salt Lake City, for 40 years. "But they're really, really expanding."

Remkes and his wife Holly, who have four children, were concerned about odor and groundwater contamination, primarily because they had watched Smithfield's massive hog farms grow to dominate the landscape in Beaver County, just south of where they live.

In 2017, Beaver County ranked No. 1 in Utah for the number of hogs sold—about 1.4 million—despite the fact that the U.S. Department of Agriculture (USDA) counted just 17 hog farms within its borders. And while the concentration began as far back as the 1990s, Smithfield is presenting more recent growth in a novel way: as climate action.

The county's newest farm complex, which can confine close to half a million hogs in one area, is a part of the company's Align Renewable Natural Gas initiative, created in conjunction with Dominion Energy. At these operations, methane that would otherwise be released into the atmosphere from manure lagoons at each concentrated animal feeding operation (CAFO) is captured, converted, and funneled into natural gas pipelines, thereby cutting emissions and providing an alternative energy source all at once.

As a greenhouse gas, methane's warming potential outpaces that of carbon dioxide, and the recent, damning U.N. climate change report recommended reducing the potent gas as a critical step to slowing climate change. On Friday, the U.S. and the E.U. pledged to cut methane emissions by 30 percent in the next decade. While the World Resources Institute estimates manure management accounts for only 7 percent of greenhouse gas emissions from agricultural production globally, those emissions increased by 66 percent in the U.S. between 1990 and 2017, primarily due to hog and dairy lagoons.

Now, as attention to cutting emissions grows, there is a policy push toward supporting animal farm biogas projects, primarily by including them in carbon offset markets.

In addition to California's two carbon offset markets, a regional market on the East Coast is now set up to pay for methane capture on farms, and the Biden administration has expressed interest in using federal policy to support the projects. In the past, methane digesters have been installed on smaller dairy farms to power those farms or in local closed-loop systems. But as momentum for cleaner energy and emissions reductions in animal agriculture has grown, Big Ag companies have joined forces with gas companies to scale up the projects and connect them to natural gas pipelines.

It's one of many reasons a coalition of environmental and animal welfare advocates has been warning that what they call "factory farm biogas" is a false climate solution; they say that government support in the form of carbon markets and tax breaks for the production of this gas will tilt the playing field in favor of the largest industrial operations and support larger, more concentrated CAFOs, which negatively impact people and the environment in other ways, including by polluting air and water.

"Anaerobic digesters are not a new technology, but in the past the incentive was for the individual farmer to run an on-site generator to offset their electricity costs," said Tyler Lobdell, a staff attorney at Food & Water Watch. "Now the integrators like Smithfield . . . are coming in to capitalize on biogas."

In addition to Smithfield's large development in Beaver County, Utah, an industrial dairy in California recently applied to more than double its herd with the installation of biogas infrastructure, to more than 9,000 cows. Oregon dairy operation Threemile Canyon Farms is one of the country's largest dairies, with a herd of about 70,000 cows in one place. Over the years, its digesters have generated generous state tax breaks and carbon credits through an Oregon state program and California's cap-and-trade market. It partnered with an investment firm for a $55 million upgrade to its digester infrastructure in 2019 to convert and connect its biogas to a natural gas pipeline. Meanwhile, hundreds of small dairy farms have gone out of business in the state over the last several decades.

Bacon with Benefits or False Climate Solutions?

In 2020, Smithfield Foods announced a commitment to reduce absolute greenhouse gas emissions across its supply chain by 30 percent and to become carbon negative across its U.S. operations by 2030. In line with those goals, the company, which is owned by Chinese firm WH Group, the world's largest pork company, announced aggressive plans to capture methane across its hog operations in several states. Environmental groups including the Environmental Defense Fund have applauded those initiatives because of their potential to reduce emissions.

The Milford, Utah project is the first of several planned as part of the Align Renewable Natural Gas initiative. In a statement provided to Civil Eats, Kraig Westerbeek, vice president of Smithfield Renewables, said the project would cut emissions by 100,000 metric tons, boost revenue for farmers, and generate clean energy to power more than 3,000 homes and businesses annually.

> Other Smithfield farm complexes in the same county already had digesters installed and have been producing biogas and generating credits from California's cap-and-trade system for several years. *GreenBiz* reported last year that Smithfield's partner, Dominion Energy, plans to sell the natural gas from the newer facility into California's Low Carbon Fuel Standard (LCFS) market.
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> Both of those markets treat the methane captured on hog farms as emissions offsets, and since methane emissions in animal agriculture are otherwise unregulated, they likely do represent real reductions, said Mark Trexler, the founder of the climate solutions-focused group, The Climatographers.

"If everything's totally voluntary and they otherwise would have simply vented the methane, then if you can get them to do something else with it, that could be a legitimate offset," he explained. Trexler said there are many situations in which regulation would be preferable compared to trying to influence corporate policies through market-based mechanisms. But even then, he said, the type of regulation matters. For example, if CAFOs were required to flare methane from lagoons—a process that burns the gas that would otherwise be released into the atmosphere—it would not have as much net climate benefit as turning the methane into natural gas.

But Lobdell and others contend that real climate solutions would reduce the source of those emissions rather than supporting the continued operation of emissions-intensive systems. On dairy farms, cows also belch methane through enteric fermentation as they digest their feed, but methane emissions from hog CAFOs come primarily from liquid waste stored in massive lagoons.

According to the EPA's 2021 report on greenhouse gas emissions, "manure management systems with the most substantial methane emissions are those associated with confined animal management operations where manure is handled in liquid-based systems." And as meat production has shifted toward CAFO systems, emissions from those systems have risen. Methane emissions from manure management on hog farms increased nearly 50 percent between 1990 and 2019 and grew by 217 percent—from 14.7 million to 32 million metric tons of CO_2 equivalent—on dairy farms. When hogs are raised on pasture or in bedded pens or cows are raised in small herds on grass, the solid waste is incorporated back into soil or used as fertilizer and, according to the EPA, produces little to no methane.

"[These methane emissions] are not an ordinary occurrence. They're a consequence of profit-maximizing decisions like confinement, concentration, and liquid-based lagoons," said Sasan Saadat, a senior research and policy analyst at Earthjustice, who said government policies that support digester technology for CAFOs incentivize growth and concentration. He pointed to a U.C. Davis analysis of projects in California that found government grants typically covered 40 percent of the capital costs of building digesters. When the researchers looked at the economics of one digester project, they found 93 percent of the projected revenue came from selling government-created environmental credits versus 7 percent from selling natural gas.

"For our government to say, 'We'll pay you to keep doing that and we'll treat it as carbon removal,' is a total fiction. These emissions are created by polluters," added Saadat.

He also pointed to the fact that biogas from CAFOs is much more expensive to produce compared to natural gas from fracking. In a 2020 Earthjustice report, Saadat and his co-authors included research showing renewable gas alternatives could only replace 13 percent of the total gas supply after two decades of increasing supply and production. So by building up and directing money toward natural gas infrastructure, he said, these alternatives direct resources to the continued use of fossil fuel gas rather than investing more public money in transitioning to renewable alternatives.

Trexler said since the U.S. still consumes a lot of gas, shifting more of that gas away from fossil fuel sources does produce a benefit, however. "But I think it's fair to say that biogas will never be a large fraction of overall gas . . . and it really is a legitimate question as to how do we move away from gas?" he said.

Community Concerns

At the center of the debate over the climate benefits of the biogas boom are people like David and Holly Remkes' and the wider communities impacted by industrial livestock operations.

In Beaver County, residents are no strangers to industrial pig farming. Circle Four Farms was established there in the early '90s and has long been one of Smithfield's largest concentrated hog operations. And over the past several decades, the CAFOs' impacts have divided community residents. There was a large manure spill in 1997, and in 2001, a local agency conducted a public health review in response to residents' concerns around air and water

quality and potential links to high illness rates. It found that the county had "higher than expected rates of hospitalization for respiratory and diarrheal illnesses" compared to surrounding counties, but that the cause could not be determined.

Because of those ongoing concerns, in 2018, after a zoning commission meeting in which some community members voiced concerns about health issues and quality of life, the county passed an ordinance that required new hog farms to be built at least five miles from the nearest residence. Smithfield sued to overturn the ordinance.

Current hog farm complexes in the county include at least 52 farm sites, aside from the new Align Renewable Natural Gas complex. Smithfield applied for construction permits to build those farms in 2017, with 26 sites, four barns per site, and 4,800 hogs per barn.
Long before that project was up and running and billed as a climate solution, Circle Four Farms was already producing biogas, and that gas has generated offset credits on California's cap-and-trade market.

Meanwhile, California's dairy biogas development has primarily occurred on clusters of large dairies and has already coincided with increases in herd sizes. In the San Joaquin Valley, where dairy CAFOs are highly concentrated and air pollution levels are among the worst in the country, the Leadership Counsel for Justice & Accountability found three examples in one county. In 2018, two dairies applied to increase their herd sizes by 700 cows each in conjunction with digester permits. A third applied to transfer additional animals from a different farm onto the farm where the digester was being constructed, thereby increasing the total herd to 31,000.

In North Carolina, researchers have been documenting the impacts of hog CAFO concentration on surrounding low-income communities of color for years, and one recent study found an estimated 89 premature deaths a year in Duplin County are linked to direct emissions from hog farms. In 2018, jurors in the state found Smithfield liable for harm caused to individuals living nearby.

Now, state legislation has allowed the company to fast-track permitting for another project in its Align Renewable Natural Gas initiative that would install digester technology and connect 19 of those existing hog farms to natural gas pipelines. Community and environmental groups are fighting those permits; they told *Inside Climate News* that one of their biggest concerns is that the infrastructure will entrench the cheap, harmful waste management systems that have long plagued their communities.

For people on the ground, whether or not the facilities in their county capture methane or produce biogas is a moot point. They just don't want the companies' practices to impact their communities and daily lives. In 2020, David Remkes joined neighbors in attempting to pass a county proposition that would stop the construction of new CAFOs without voter approval of each one. Last November, the proposition failed, but by a very slim margin—48 percent supported it. "I think it sent a message," he said.

Lisa Held is Civil Eats' senior staff reporter. Since 2015, she has reported on agriculture and the food system with an eye toward sustainability, equality, and health, and her stories have appeared in publications including *The Guardian*, *The Washington Post*, and *Mother Jones*. In the past, she covered health and wellness and was an editor at Well+Good. She is based in Baltimore and has a master's degree from Columbia University's School of Journalism. Read more >

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