

Dirty Delaware Project to Turn Poultry Slaughterhouse Waste into Pipeline Grade Methane

A dirty new project in Delaware threatens to lock the Delmarva region into climate chaos while propping up factory farming. A company called Bioenergy DevCo (Bioenergy) has entered into a 20-year contract with Perdue Farms to construct a \$7 million anaerobic digestion system for so-called renewable natural gas (RNG).¹ But RNG is just a greenwashed, cleaner-sounding name for biomethane, or processed biogas that can be delivered in pipelines.² So, it's no surprise that Bioenergy, a global company backed by private equity, has also teamed up with Chesapeake Utilities to flood its natural gas system with biomethane.³ This is the first time Chesapeake Utilities has looked to add biomethane to its network. The plan also includes pouring millions

of dollars into gas tanker trucks to carry the biomethane to the 500-mile Eastern Shore Natural Gas pipeline network in Maryland.⁴

Perdue and other factory farm conglomerates seek to continue unsustainable and devastating methods of raising poultry, while energy companies like Chesapeake are looking to flood the natural gas network with biomethane to help diversify their portfolios and keep their assets from becoming stranded. But this plan poses a huge threat to local communities, environmental justice, and the fight to stop climate chaos more broadly.

The Proposal

The contract between Bioenergy and Perdue was completed in November 2019 for an initial 15-year term, with an option to extend another five years. Perdue's composting facility was purchased by Bioenergy in February 2020. Bioenergy is also in negotiations with other major poultry



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processing companies, including Allen Harim, Mountaire, Amick, and Tysons, for similar projects in the Delmarva.⁵

The site would be equipped to receive and process large quantities of poultry slaughterhouse sludge (known as DAF sludge because of the dissolved air flotation (DAF) system that produces it), poultry litter (manure waste), and other organic wastes.⁶ The DAF sludge would be used as feedstock for the digesters, of which Bioenergy intends to receive as much as 248,083 short tons per year.⁷ The dissolved air flotation process is one of the most common poultry processing wastewater treatments used in more than three-fourths of all slaughter plants.⁸ The site is also slated to have an on-site wastewater treatment plant and composting facility.⁹ Bioenergy intends to sell digestate from the anaerobic digester as an “organic soil conditioner.”¹⁰

What exactly is DAF?

Dissolved air flotation (DAF) is a wastewater processing unit used in a variety of industries, including the food industry. It “pretreats” food processing waste by reducing the amount of suspended solids, fats, oils and greases.¹¹ The DAF operation separates contaminants from the liquid waste stream which results in a concentrated “float” or “sludge.”¹²

DAF is a form of flotation treatment, which means it relies on the “buoyancy of gas” to lift contaminants present in the liquid waste stream to the surface.¹³ Before being injected into the DAF unit, a chemical coagulant helps cluster raw wastewater solids together and a chemical flocculant is added to help large particles float more easily. Once the chemically treated wastewater is in the DAF, small air bubbles stick to the flocculated contaminants, like starch granules or coagulated blood, and they float to the surface.¹⁴

The sludge is skimmed from the DAF unit for disposal. Various disposal methods range from land application to anaerobic digestion.¹⁵

The Digester

DAF sludge can be used in anaerobic digestion because it has high oil and grease concentrations, which are high in organic matter and have a lot of energy potential.¹⁶ But digestors are typically expensive and not feasible without significant public funding and incentives.¹⁷

The prefix “bio” before biogas doesn’t make it clean — it’s still comprised of methane (the primary constituent of fracked gas) and other pollutants.¹⁸ Methane is nearly 90 times more powerful a greenhouse gas than carbon diox-

ide over a 20-year period.¹⁹ Plus, burning biogas releases CO₂ and other poisonous gases, including nitrogen oxides, ammonia and hydrogen sulfide.²⁰ On top of this, the transport of biogas and materials to and from digesters still uses massive amounts of toxic diesel fuel.²¹

Health, Safety and Environmental Issues

Biogas is extremely flammable and has the potential to be explosive,²² making digester operations dangerous. Moreover, they produce neither clean nor safe energy, because of methane combustion emissions, leaks, accidental spills and explosions.²³ For example, one farm in the UK was the site of two separate digester spills, which spewed toxic black sludge onto acres of farmland — killing more than 50 farm animals — and into a nearby stream.²⁴ The sludge even reached neighboring farms and racked up thousands (in English pounds) in damages. The Bioenergy project is proposed to be located within the Nanticoke watershed, which is already impaired with nitrogen and phosphorus because of the existing poultry factory farms.²⁵

Data have shown that digesters are responsible for both systemic and accidental methane emissions. In a review of several studies, researchers estimated that the leakage from “renewable” methane production is actually similar to that of fossil fuel gas production.²⁶ The proposed digester is slated to produce 521 million cubic feet of renewable natural gas (RNG) per year — if all of it were combusted, this amount would be comparable to over 31 million pounds of coal being burned, or 71 million miles driven by an average passenger car.²⁷ Also, facilities like this often need a control flare to manage the potentially explosive gases,²⁸ which can affect local air quality.

Environmental Injustice

Polluting facilities have long been disproportionately located near disadvantaged communities, including lower-income areas and communities of color that face higher pollution burdens than their more affluent and whiter neighbors. These communities often lack the resources or political power to prevent the arrival of unwanted polluters.²⁹ Polluters count on that power disparity in their site planning. The placement of dirty digesters in already disadvantaged communities will only exacerbate the existing environmental degradation facing vulnerable populations around the country. And this is exactly the case with Bioenergy’s project.

For example, in Seaford, Delaware, people of color make up about 32 percent of the population within the three-mile radius of the proposed anaerobic digester. While this

FIG. 1: Environmental Injustice: Racial Composition of Population Around Site, County and State

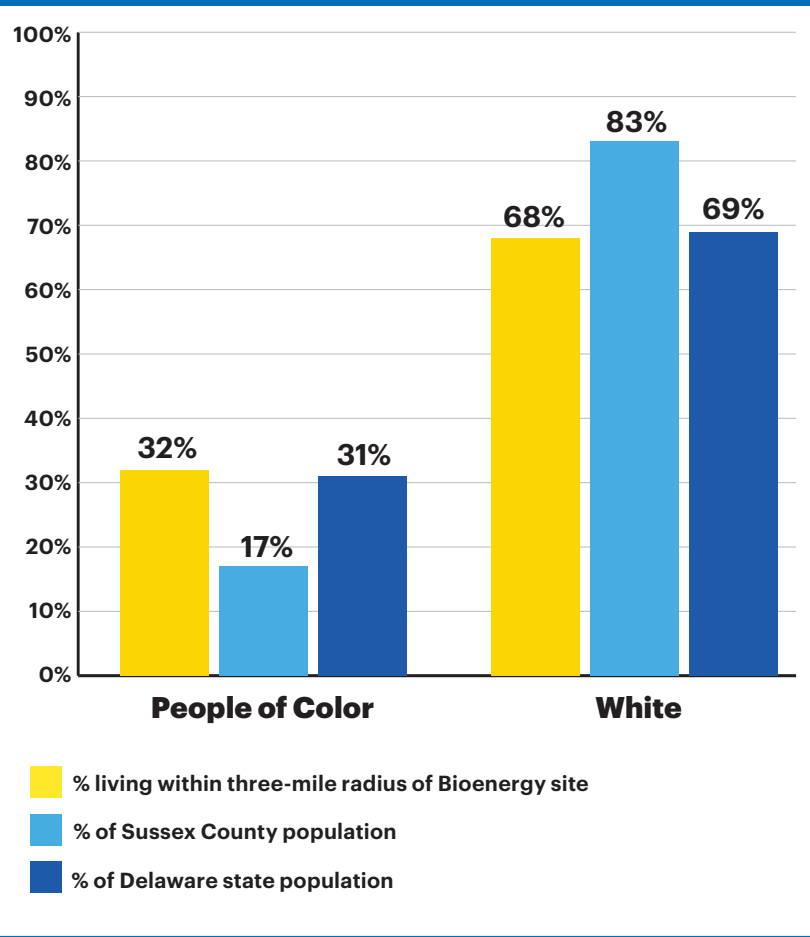
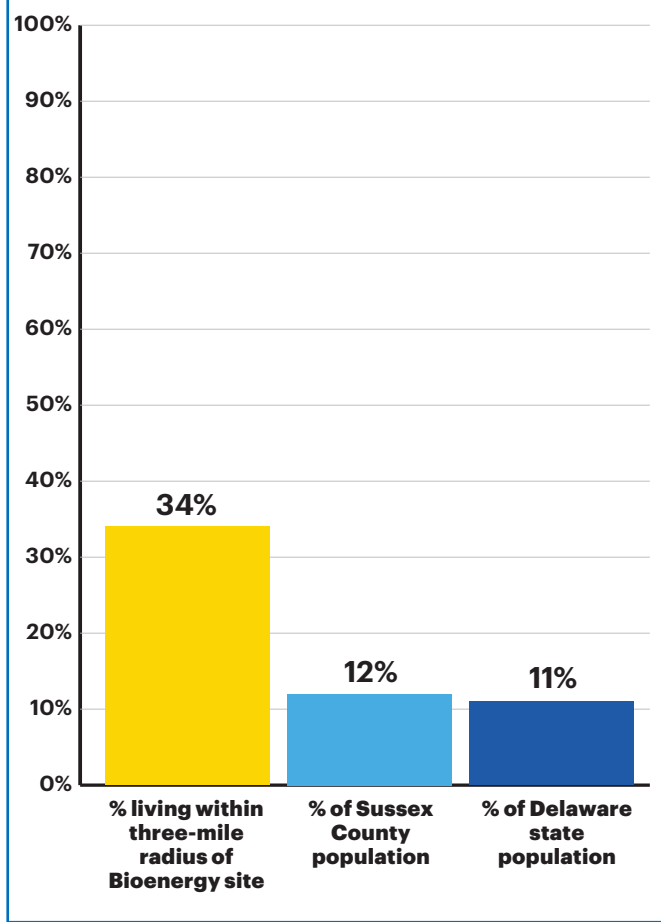


FIG. 2: Environmental Injustice: Population in Poverty Around Site, County and State



DATA SOURCE: U.S. EPA. Enforcement and Compliance History Online (ECHO); U.S. Census Bureau.

is a similar racial composition to the rest of the state, it’s starkly different from the rest of Sussex County, which is 17 percent people of color (see Figure 1).

Likewise, more than a third of the population within the three-mile radius lives below the poverty line, compared to 12 percent of Sussex County (see Figure 2). And over half of the households within the 3-mile radius of the facility have incomes below the state and county median household income, with nearly 30 percent of those households earning \$25,000 or less a year and 15 percent bringing home under \$15,000.³⁰ All this suggests an environmental and economic injustice.

This Project Must Be Stopped

If approved, this factory farm biogas scheme would accept waste from states across the region and entrench factory farming by creating a market for its pollution. Simply put: it is an environmental, climate, and environmental justice disaster in the making.

Bioenergy tried to push their proposal through the Sussex County Planning and Zoning Commission without a proper application or any public involvement. A coalition of activists stopped them. This project has been met with resistance in the form of testimony, public comment, events and calls to elected officials from Delawareans across the state. This digester scheme requires a number of permits and, if fully permitted, would lock Delaware and the Delmarva region into decades more of methane and factory farm pollution.

Endnotes

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