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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 fossil-fueled climate chaos while propping up factory farms. A company called BioEnergy Dev Co (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

It seems like a win-win for Perdue and other factory farm conglomerates that want to continue unsustainable and devastating methods of raising livestock and for energy companies like Chesapeake, because biomethane could either diversify their portfolios or keep their assets from becoming stranded. But ultimately, 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 5-years. Perdue's composting facility was purchased by BioEnergy in February 2020. BioEnergy is also in negotiations with other major poultry processing companies, including Allen Harim, Mountaire, Amick, and Tysons, for similar projects in the Delmarva.⁵

The proposed digester would be equipped to receive and process 250,000 tons of poultry litter (manure waste), poultry slaughterhouse sludge (known as DAF because of the dissolved air flotation system the produces it), and other organic wastes.⁶ DAF is one of the most common poultry processing wastewater treatments used in more than three-fourths of all slaughter plants.⁷ The site is also slated to have an on-site wastewater treatment plant and composting facility.⁸ BioEnergy intends to sell digestate from the anaerobic digester as an "organic soil conditioner"⁹

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.¹⁰ The DAF operation separates contaminants from the liquid waste stream which results in a concentrated "float" or "sludge."¹¹

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.¹² 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.¹³

The sludge is skimmed from the DAF unit for disposal. Various disposal methods range from land application to anaerobic digestion.¹⁴

The Digester

DAF-sludge can be used in anaerobic digestion because it has a high oil and grease concentration, which are high in organic matter and have a lot of energy potential.¹⁵ But digestors are typically expensive and not feasible without significant public funding and incentives.¹⁶ And they produce neither clean nor safe energy, because of methane combustion emissions, leaks, accidental manure spills and explosions.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 dioxide 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

These digesters do not solve animal waste problems, and they do not reduce phosphorus or nitrogen levels in manure. Manure still needs to be managed through practices such as field application.²²

Health and Safety Issues

Digester operations are also riddled with safety issues. 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.²³ The sludge even reached neighboring farms and racked up thousands in damages.

Moreover, air pollutants from these operations disrupt daily living — especially of the predominately Black, Hispanic and Indigenous residents in the communities in which they are often sited — contributing to stress and anxiety, mucous membrane irritation, respiratory conditions, reduced lung function and blood pressure elevation.²⁴ Biogas construction and production will also bring its own pollutants and emissions — from the exhaust generated from the use of heavy equipment and vehicles, to the potential odors that will come with the transport of manure and other material used for digestion.²⁵

The placement of 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.

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.²⁶ Polluters count on that power disparity in their site planning.

For example, in Seaford, Delaware, people of color make up about 32 percent of the population within the 3-mile radius of the proposed anaerobic digester. While this is a similar racial composition to the rest of the state, it’s starkly different from the rest of Sussex County, which is

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

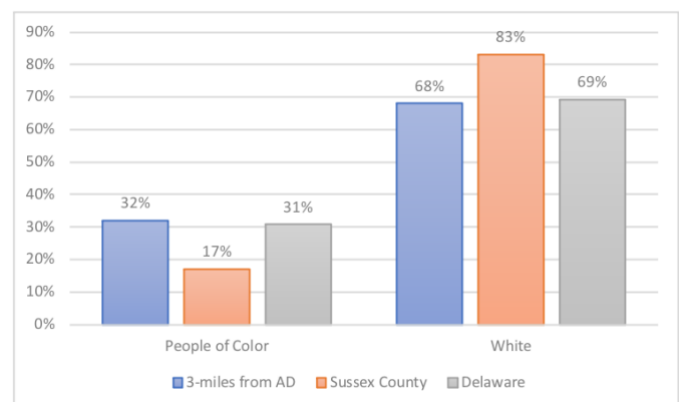
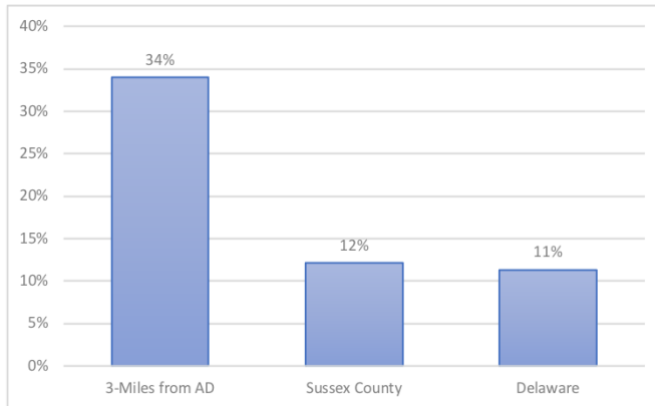


Figure 2: Environmental Injustice: Population in Poverty Around Site, County and State



17 percent people of color. Likewise, more than a third of the population within the 3-mile radius lives below the poverty line, compared to 12 percent of Sussex County (see Figures 1 and 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 \$15,000.²⁷ 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.

Last year, 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. But now, BioEnergy needs an amended "conditional use" permit approved by the Commission and then the Sussex County Council to build the anaerobic digester.

The Sussex County Council must deny BioEnergy its conditional use permit, which would lock Delaware and the Delmarva region into decades more of methane and factory farm pollution.

Endnotes

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