



**Concerns With
Directed Biogas
Projects in
North Carolina**

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Executive Summary

All industrial hog operations in North Carolina—including those that produce biogas—must install cleaner technology to prevent harm to nearby communities and our rivers, streams, and air.

More than 20 years ago, after a series of devastating hog lagoon failures in floodplains across Eastern North Carolina, Smithfield Foods promised to abandon the harmful lagoon and sprayfield system and develop and implement cleaner, more sustainable technologies to manage waste at industrial hog operations. After several new, improved technologies were developed, the corporation—which is the largest pork producer in the world—claimed it could not afford to install them at any of its operations. Now, instead, Smithfield stands to make a significant profit by installing directed biogas technology, and again burdening communities and the environment with the costs of decreasing public health and increasing pollution. This is not a step towards environmental sustainability, but merely an effort by this company to further entrench its outdated, primitive system of waste management proven to harm North Carolinians.

Smithfield Foods and Dominion Energy formed Align RNG in November 2018, committing to invest in directed biogas projects. Directed biogas projects involve covering an unlined hog waste lagoon, trapping the methane generated under the cover, transporting the gas through a maze of new pipelines, processing it at a central, company-owned facility, and injecting the refined gas into natural gas pipelines.

We oppose the directed biogas projects proposed by Align RNG and call for an end to the lagoon and sprayfield system of swine waste management. That system—like the Align RNG projects reliant on it—disproportionately harms communities of color. The lagoon and sprayfield system pollutes our rivers, streams, and the air we breathe, contaminates groundwater and threatens the drinking water supplies, generates noxious odors, causes harmful air pollution, and threatens the health of neighbors. Align RNG's directed biogas projects will exacerbate many of these harms.

Biogas projects increase the threat of water pollution. Covering a waste lagoon increases the concentration of ammonia in the liquid waste that will still be sprayed onto cropland and often runs off into our surface waters or seeps into groundwater. It also increases downward pressure on unlined lagoons. Directed biogas projects are even worse, as methane leakage during digestion, transport, and storage may mitigate any supposed climate benefits while constructing pipelines may destroy wetlands which provide important protections against flooding.

Meanwhile, Smithfield and Dominion Energy stand to make money by displacing the burden of their pollution onto families and communities in Eastern North Carolina. Affected communities must be prioritized over corporate profits. We oppose directed biogas projects that will harm, rather than benefit, host communities.

I. Overarching Position Statement

We stand for the health, well-being and fair treatment of our communities and the protection of our state's natural resources. We object to the abandonment or relaxation of commitments by the pork industry and our elected officials to address harm caused by industrial hog operations. We have waited for more than 20 years for the promised end to the lagoon and sprayfield system of swine waste management and believe all industrial hog operations in the state—including those that produce biogas—must install cleaner technology to prevent harm to nearby communities and our environment.

II. Concerns With Directed Biogas Projects in North Carolina

As explained in greater detail below, the use of the lagoon and sprayfield system to manage swine waste pollutes our water, air, and land; threatens public health; and disproportionately impacts communities of color and low income in North Carolina. Countless scientific studies, as well as a recent civil rights investigation and multiple jury verdicts, have shed light on the adverse impacts of this outdated system.

One of the adverse impacts of storing swine waste in lagoons is the generation of methane, a potent greenhouse gas. Methane generation stems from the biological oxidation of organic substances in the absence of oxygen. It is only when liquified and stored in the absence of oxygen (i.e., in an anaerobic lagoon) that bacteria convert carbon in swine waste to methane in large quantities. In other words, industry's manure management choices create emissions that are not otherwise the natural product of pork production.

Despite the known harms caused by the lagoon and sprayfield system, the hog industry plans to double-down on the use of the system. Smithfield, the dominant pork producer in the world, recently announced plans to convert 82% of its finishing operations to biogas production, and do so in a way that entrenches the lagoon and sprayfield system.¹ Increasingly, the industry is focused on “directed biogas” projects, in which methane gas

¹ Westerbeek, Kraig. *Generating Bioenergy From Swine Waste* [PowerPoint Presentation]. NC Energy Policy Council, Raleigh, NC (May 2018).

² “Dominion Energy and Smithfield Foods Invest Half Billion Dollars to Become Largest Renewable

is captured on-site, then moved through in-ground pipes to a central location for conditioning and injection into natural gas pipelines for distribution.

Align RNG, a joint venture of Dominion Energy and Smithfield, plans to invest \$500 million in biogas projects of this sort in North Carolina, Virginia, Utah, Arizona, and California.² Align RNG is taking steps in Duplin and Sampson Counties to cover waste lagoons at 19 industrial hog operations to trap methane, and pipe it to a centralized facility to refine and sell in natural gas pipelines. And the company has already announced plans to capture methane from 30 additional swine operations in the next phase of project development.³

The pork industry should move away from the lagoon and sprayfield system, as Smithfield promised to do almost two decades ago. We have five primary concerns about Align RNG's directed biogas projects.

- 1. Biogas production that does not meet environmentally superior technology standards will further entrench the harmful and outdated lagoon and sprayfield system.**

Biogas technology does not address the public health and environmental harms inherent in industrial-scale pork production because it relies on the lagoon and sprayfield system that creates these harms. We oppose biogas projects, such as those proposed by Align RNG, that fail to reduce adverse impacts or qualify as environmentally superior technologies.

We acknowledge the value of greenhouse reduction that *may* result from the capture and destruction of methane. However, the most common technology may not result in net climate benefits. Also, without evaluating the impacts at the farm level, there will be no way to evaluate the veracity of industry's claims that biogas will actually reduce emissions or noxious odors. There are currently no air monitoring requirements for permitted swine operations. Moreover, anaerobic digesters produce methane at higher rates than uncovered lagoons, and therefore, any methane leakage from a digester might rapidly diminish any associated climate benefits.

² "Dominion Energy and Smithfield Foods Invest Half Billion Dollars to Become Largest Renewable Natural Gas Supplier in U.S." *PR Newswire* (23 Oct. 2019), www.prnewswire.com/news-releases/dominion-energy-and-smithfield-foods-invest-half-billion-dollars-to-become-largest-renewable-natural-gas-supplier-in-us-300944053.html.

³ Downey, John. "How Dominion Energy, Smithfield Foods Plan to Make NC a Leader in Renewable Natural Gas." *Charlotte Business Journal* (12 Dec. 2019), www.bizjournals.com/charlotte/news/2019/12/02/how-dominion-energy-smithfield-foods-plan-to-make.html.

Also, despite industry claims, biogas technology fails to fully address odors emanating from industrial hog operations. Even if odor emissions from lagoons are reduced, which is not certain, these operations emit numerous airborne contaminants including gases, odor, dust, and microorganisms from manure decomposition in confinement houses and during land application.⁴ Odor and other pollution from confinement houses and sprayfields are not addressed by methane capture technologies.

2. Biogas technology that fails to meet the EST standards may make impacts of the lagoons and sprayfield system worse.

Even if covering lagoons to capture methane may reduce lagoon odor, installing covers will exacerbate other adverse effects of the lagoon and sprayfield system by:

- Increasing the concentration of nitrogen in wastewater, elevating the risk of water pollution from runoff as well as the risk of soil and groundwater contamination caused by overapplication;
- Increasing the downward pressure on unlined lagoons, elevating risk of groundwater contamination; and
- Increasing ammonia and nitrous oxide emissions on industrial hog operations.

According to the USDA, “Land application of digester effluent, compared with fresh manure, may have a higher risk for both ground and surface water quality problems. Compounds such as nitrogen, phosphorus, and other elements become more soluble due to anaerobic digestion and therefore have higher potential to move with water.”⁵ Without components notably absent from Align RNG’s projects, biogas technologies threaten to increase the risk of nutrient contamination of soil and groundwater as well as the atmospheric emission of ammonia.

In addition, covering and pressurizing lagoons will increase downward pressure and increase the likelihood of seepage and groundwater contamination.⁶ Most waste lagoons remain unlined and even clay or synthetic liners--required only for the few lagoons built after 1997—have shown to allow seepage of waste into the groundwater under normal operating conditions. This is particularly troubling because many residents of rural eastern North Carolina—including in areas with high concentrations of industrial hog

⁴ Wisconsin Department of Agriculture, Trade & Consumer Protection. Wisconsin Department of Natural Resources. *Final Report on Wisconsin’s Dairy and Livestock Odor and Air Emission Project*. (Sept. 2009), <https://dnr.wi.gov/topic/CAFO/documents/FinalReportAppL.pdf>.

⁵ Natural Resources Conservation Service, U.S. Department of Agriculture, Conservation Practice Standard No. 366, Anaerobic Digester (June 2017), https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1254996.pdf.

⁶ D. Lee Miller & Ryke Longest, *Reconciling Environmental Justice with Climate Change Mitigation: A Case Study of NC Swine CAFOs*, 21 Vt. J. Evtl. L. 523, 540 (2019).

operations—get their drinking water from wells connected to underground aquifers that in many cases, are already contaminated by waste seepage.

3. Transporting biogas would impose additional disproportionate burdens on communities of color.

A vast network of in-ground pipelines is necessary to distribute biogas as part of directed biogas projects, which are distinguishable from biogas projects used to power on-farm operations. For instance, transmitting gas from five industrial hog operations to the Optima KV directed biogas project required almost 8 miles of in-ground piping, even though the facility was constructed in an area of highly concentrated industrial hog operations.⁷ The first Align RNG project under construction contemplates 30 miles of pipeline in the first phase of development to connect 19 hog operations to a centralized treatment facility.⁸ Even more pipelines will be required for future biogas projects. Concerns about the pipeline distribution network include but are not limited to: potential leakage or rupture that would add to existing pollution issues in already overburdened communities, potential pipeline fires or explosions, and the use of eminent domain to obtain property rights necessary to construct pipelines.

Moreover, pipeline infrastructure development will require filling wetlands, which are ubiquitous in the coastal plain of North Carolina where the vast majority of industrial hog operations are located. The destruction of wetlands will increase the vulnerability of communities to flooding caused by increasingly frequent and severe extreme weather events, including tropical storms and hurricanes. Wetlands help retain water from heavy rain events, thereby helping to mitigate flooding in surrounding communities. An acre of wetlands can store 1 to 1.5 million gallons of floodwater. Wetlands also provide critical habitat for a variety of species, help control erosion, protect water quality, and restore groundwater supplies. We cannot support infrastructure development that will deprive North Carolinians of these critical natural resources.

Industrial hog operations are already disproportionately located in communities of color.⁹ Residents currently complain about pollution stemming from the transport of hogs to/from individual hog operations. If biogas is transported through a network of

⁷ Duke Energy, *Duke Energy Using North Carolina-based Renewable Natural Gas in First-Of-Its-Kind Project* (29 Mar. 2018), <https://news.duke-energy.com/releases/duke-energy-using-north-carolina-based-renewable-natural-gas-in-first-of-its-kind-project>.

⁸ John Downey, *How Dominion Energy, Smithfield Foods Plan to Make NC a Leader in Renewable Natural Gas*, *Charlotte Bus. J.* (2 Dec. 2019) <https://www.bizjournals.com/charlotte/news/2019/12/02/how-dominion-energy-smithfield-foods-plan-to-make.html>.

⁹ Steve Wing & Jill Johnston, *Industrial Hog Operations in North Carolina Disproportionately Impact African-Americans, Hispanics, and American Indians* at 6 (revised 19 Oct., 2015), available at <https://www.ncpolicywatch.com/wp-content/uploads/2014/09/UNC-Report.pdf>.

pipelines criss-crossing communities, burdens on these same residents would increase. It is bad enough that the lagoon and sprayfield system violates neighbors' property rights, as repeatedly shown in recent nuisance litigation; it will be worse if neighboring property is taken to transport biogas.

4. Decisions to permit biogas projects fail to consider community input/impacts.

Communities most impacted by biogas projects are not afforded a meaningful opportunity to participate in the decision-making process for biogas facilities. Involving the impacted community in the decision-making process for biogas projects is critical, as is evaluating the additional cumulative adverse impacts of swine production caused by biogas projects that rely on the harmful lagoon and sprayfield system.

The N.C. Department of Environmental Quality (DEQ) finalized its Public Participation Policy in 2020, and the agency must follow this policy when making decisions and engaging the public in the context of biogas permitting.¹⁰ Pursuant to the Public Participation Policy, and given the significant public interest in biogas projects coupled with the racially disparate impacts thereof, DEQ should commit to holding public hearings, soliciting public comments, and soliciting community input on all permitting decisions related to biogas projects, even if DEQ's underlying regulations do not require public input.

The agency must also acknowledge the full scope of impacts resulting from a given project. For instance, DEQ must provide an opportunity to comment on any changes to certificates of coverage for facilities installing lagoon covers in conjunction with directed biogas projects. The agency does not typically solicit public input regarding changes to certificates of coverage or notify residents of surrounding communities when they are approved.

In addition, in keeping with basic principles of environmental justice, DEQ must commit to weighing communities' cumulative burdens when evaluating permit applications related to biogas projects. Prior to issuing or modifying permits, DEQ should conduct an equity analysis to consider the degree to which the proposed action would compound or ameliorate existing adverse impacts in communities. To date, proponents of biogas have focused on compliance with the state's Renewable Energy and Energy Efficiency Portfolio Standard (REPS) and the economic benefits of biogas while ignoring the burdens industrial hog operations impose on local communities.

¹⁰ N.C. Department of Environmental Quality, *Public Participation Plan* (Feb. 2020), <https://files.nc.gov/ncdeq/EJ/Public-Participation-Plan.pdf>.

DEQ created an Environmental Justice and Equity Advisory Board to offer guidance to the Secretary.¹¹ This Board should advise DEQ how to address environmental justice concerns. Governor Cooper recently issued an Executive Order directing DEQ, in partnership with the Board, to “integrate environmental justice considerations into existing and future policies, programs, and procedures.”¹² Each of these advisory bodies must take seriously its charge and take steps to ensure the meaningful involvement and fair treatment of communities impacted by directed biogas projects.

5. Biogas projects must be designed to benefit communities.

Communities near swine operations have shouldered the burden of pollution and health impacts resulting from this industry’s waste management decisions. This is unacceptable. As explained above, biogas projects that do not employ environmentally superior technologies will continue to impose similar costs on surrounding communities. And directed biogas projects--including related pipeline infrastructure--threaten to add to the litany of documented harms. Developers and utilities must implement strategies that equitably distribute economic benefits to local communities. For instance, local energy distribution through microgrids may enable biogas to power the community in which it is generated.

III. Key Historical Context and Recent Developments

Over the last three decades, the pork industry has refused time and time again to clean up the mess caused by the lagoon and sprayfield system, ignoring environmental degradation and leaving community members sick and unable to enjoy their property. Elected officials in our state have repeatedly failed to hold the pork industry accountable for these harms.

Animal Waste Management in North Carolina

In North Carolina, the country’s second-largest producer of pork, community members and environmental advocates have long demanded an end to the lagoon and sprayfield system. In this primitive system, a pit in the ground holds untreated hog feces and urine and gigantic sprinklers then spray the liquid waste onto nearby cropland.

¹¹ N.C. Department of Environmental Quality, *DEQ announces the creation of a Secretary’s Environmental Justice & Equity Board* (2 May 2018), <https://deq.nc.gov/news/press-releases/2018/05/02/deq-announces-creation-secretary%E2%80%99s-environmental-justice-equity-board>

¹² Governor Roy Cooper, *Addressing the Disproportionate Impact of Covid-19 On Communities of Color*, N.C. Exec. Order No. 143 (4 Jun. 2020), <https://files.nc.gov/governor/documents/files/EO143-Addressing-the-Disproportionate-Impact-of-COVID-19-on-Communities-of-Color.pdf>

The use of the lagoon and sprayfield system stemmed from the consolidation, concentration, and industrialization of pork production in the state, especially over the final two decades of the 20th century. In 1982, there were more than 11,000 swine farms in North Carolina and a commercial hog operation in all but one of the state's 100 counties.¹³ By 1997, there were fewer than 3,000 farms, and production was heavily concentrated in the coastal plain.¹⁴ Yet, over the same time period, North Carolina swine production increased and ours became one of the top hog-producing states in the country. Farmers had traditionally applied waste to land to fertilize crops; in the new system, there is too little available land and the amount of waste generated far exceeds what is needed to fertilize crops.

The increased concentration of industrial hog operations using the lagoon and sprayfield system to manage tremendous volumes of waste generated across eastern North Carolina has myriad adverse environmental and public health impacts, including but not limited to harmful algal blooms, fish kills, and eutrophication in our rivers and estuaries; respiratory ailments; pollution of drinking water sources; excessive noxious odors; soil contamination; and eye, nose, and throat irritation.

In 1995, a lagoon breach spilled 25 million gallons of hog waste into the New River.¹⁵ The following year, Hurricane Bertha triggered an additional 1.8 million gallon hog waste spill. And in 1999, Hurricane Floyd hit eastern North Carolina, causing at least five swine lagoons to burst and flooding an additional forty-seven.

It did not take long for the threats to public health and natural resources posed by this archaic system to motivate a response from our state government. Then-Governor Jim Hunt created a Blue Ribbon Commission to study the effect of agricultural waste management on air and water quality and propose solutions. In 1996, the Commission produced a report with a host of regulatory, policy, research, and legislative recommendations as well as the observation that “[i]n the intermediate to long run, exclusive reliance upon lagoon technology as the permitted method of animal waste disposal is not prudent.”¹⁶ The Commission encouraged the legislature to incentivize the “evaluation of new and innovative animal waste management technologies.”¹⁷

¹³ Bob Edwards & Anthony E. Ladd, *Environmental Justice, Swine Production and Farm Loss in North Carolina*, 20 Soc. Spectrum 263, 268 (2000).

¹⁴ Wendee Nicole, *CAFOs and Environmental Justice: The Case of North Carolina*, 121 *Envtl. Health Persp.* A182 (2013), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3672924/pdf/ehp.121-a182.pdf>.

¹⁵ *Huge Spill of Hog Waste Fuels an Old Debate in North Carolina*, N.Y. Times, § 1, at 21 (25 June 1995), <https://www.nytimes.com/1995/06/25/us/huge-spill-of-hog-waste-fuels-an-old-debate-in-north-carolina.html>.

¹⁶ Blue Ribbon Study Commission on Agricultural Waste, *Report to the 1995 General Assembly of N.C. 1996 Regular Session 29* (16 May 1996)

¹⁷ *Id.*

The N.C. General Assembly also responded. In 1997, the legislature enacted a moratorium on the use of the lagoon and sprayfield system at any new or expanded hog operation.¹⁸ The same bill directed the N.C. Department of Agriculture to “develop a plan to phase out” the lagoons and sprayfield system. This functional moratorium was made permanent in 2007.¹⁹

Under the moratorium, new or expanding swine facilities were required to employ waste management technology to address what were by then well-recognized failings of the lagoon and sprayfield system. These environmentally superior technologies were defined as those that would

- (1) Eliminate the discharge of animal waste to surface water and groundwater through direct discharge, seepage, or runoff;
- (2) Substantially eliminate atmospheric emission of ammonia;
- (3) Substantially eliminate the emission of odor that is detectable beyond the boundaries of the parcel or tract of land on which the swine farm is located;
- (4) Substantially eliminate the release of disease-transmitting vectors and airborne pathogens; and
- (5) Substantially eliminate nutrient and heavy metal contamination of soil and groundwater.²⁰

An Unfulfilled Promise: The Smithfield Agreement

In 2000, the Attorney General and Smithfield Foods, the largest pork producer in the world, signed the Smithfield Agreement, under which Smithfield committed to funding research for developing new technologies for waste management that met the environmental performance standards described above and promised to implement new technologies at its facilities in North Carolina.

Since the signing of the Agreement, multiple environmentally superior technologies have been tested on North Carolina swine operations and proven capable of meeting the

¹⁸ S.L. 1997-458 § 1.

¹⁹ *Id.* at § 12.4.

²⁰ N.C. Gen. Stat. § 143-215.10I (2020).

statutory performance metrics.²¹ But the pork industry has refused to install this advanced technology, even when heavily subsidized by North Carolina taxpayers, as through the now-defunct Lagoon Conversion Program.²²

North Carolina's Renewable Energy and Energy Efficiency Portfolio Standard

At the same time the legislature was trying to clean up hog farms it was also busy trying to solve the problem of North Carolina's over-reliance on coal-fired power plants. In August 2007, the N.C. General Assembly enacted the Renewable Energy and Energy Efficiency Portfolio Standard (REPS), which considered animal waste a "renewable energy resource" and required, among other provisions, that 0.2% of the state's electricity come from swine waste.²³ The legislature provided a long-term compliance schedule to meet this requirement: 0.07% by 2018-2019, 0.14% by 2020-2021, 0.2% by 2022 and thereafter. The N.C. Utilities Commission has delayed these deadlines numerous times.

Notable Recent Developments

In just the last five years:

- The EPA expressed "grave concern" about the disproportionate adverse impact of hog operations on communities of color in North Carolina;
- Increasingly frequent and severe rain events, including two 1,000-year storms (Hurricanes Matthew and Florence) led to widespread flooding and the structural failure of hog waste lagoons, polluting our rivers and streams with millions of gallons of untreated hog waste;
- Public health researchers added to the large body of research showing residents living near industrial hog operations have higher rates of deadly diseases; and
- Five juries found that operation of the lagoon and sprayfield system created nuisance conditions that deprived neighbors of protected property rights, and awarded millions in compensatory and punitive damages. A federal appeals court affirmed the first jury verdict on appeal, and Smithfield entered into a confidential settlement with the plaintiffs.

²¹ C.M. Williams, Animal & Poultry Waste Mgmt. Ctr., N.C. State Univ., Evaluation of Generation 3 Treatment Technology for Swine Waste 2 (2013), https://projects.ncsu.edu/cals/waste_mgmt/smithfield_projects/CWMTF-Report.pdf (noting second and third generation technologies met environmental performance standards at reduced cost compared to earlier technology).

²² N.C. Department of Agriculture and Consumer Services, Lagoon Conversion Program, (24 Feb. 2019), https://web.archive.org/web/20190224204049/http://www.ncagr.gov/SWC/costshareprograms/Lagoon_Program/index.html.

²³ S.L. 2007-397 § 2.(a).

Instead of acting to protect our communities and natural resources:

- The legislature decreased government transparency by limiting public access to the types of records used to prove the harms caused by the lagoon and sprayfield system;
- The legislature fundamentally altered state nuisance law, significantly limiting available citizens' ability to enjoy their property and making it essentially impossible to bring a nuisance case against an industrial hog operation; and
- The legislature eliminated the requirement that existing swine operations must invest in environmentally superior technology when modifying their operations; and
- The Governor announced a plan to tackle climate change that endorses biogas projects.

North Carolinians have learned more in recent years about the harms caused by the lagoon and sprayfield system, underscoring the need for environmentally superior technology to manage swine waste. Yet, when North Carolinians successfully demonstrated those harms, including in five jury trials in federal court, the legislature chose to favor industry interests over community needs by weakening or eliminating available legal remedies. Meanwhile, the threat of climate change has caused some decision-makers to focus exclusively on greenhouse gas reduction and ignore other harms posed by the lagoon and sprayfield system.

In 2017, after a lengthy investigation, the EPA's External Civil Rights Compliance Office issued a letter expressing "grave concern" that African-Americans, Latinos, and Native Americans have been subjected to discrimination as a result of the continued permitting, by the N.C. Department of Environmental Quality, of the use of the lagoon and sprayfield system.²⁴ Notwithstanding, in 2019, the agency once again renewed the general permit, resisting calls for the end of this harmful system of waste management.

With Hurricane Matthew in 2016 and Hurricane Florence in 2018, North Carolina suffered the impacts of two 1,000-year storms in less than two years. Floodwaters inundated sprayfields and breached swine waste lagoons, sending millions of gallons of untreated waste into our rivers, lakes and streams, exposing the vulnerability of communities and our environment to the continued use of the lagoon and sprayfield system. The latest North Carolina Climate Science Report makes clear that the state will experience stronger, more frequent rain events—and as a result, more flooding events—

²⁴ Letter from EPA External Civil Right Compliance Office, Office of General Counsel, to William G. Ross, Jr., Acting Secretary, North Carolina Department of Environmental Quality, (Jan. 12, 2017), <http://blogs.law.unc.edu/documents/civilrights/epalettertodeq011217.pdf>.

as the climate continues to change.²⁵ Moreover, a recent lagoon breach in Sampson County following just two inches of rainfall served as a reminder that it does not take a hurricane for the current system to fail.²⁶

Indeed, the operation of the lagoon and sprayfield system harms North Carolinians even under sunny skies. When presented with the evidence about the impact of the lagoon and sprayfield system on neighboring residents, juries repeatedly concluded that it violated state nuisance law and deprived neighbors of property rights. Beginning in 2014, 25 cases were filed on behalf of more than 500 neighbors of industrial hog operations in eastern North Carolina against Murphy Brown, a subsidiary of Smithfield Foods. Juries sided with residents, who showed the court that they could not enjoy their properties due to noxious odors, flies, and other unpleasant conditions caused by the lagoon and sprayfield system. Plaintiffs also noted how Smithfield consented to eliminate the lagoon and sprayfield system in Missouri after the company was sued by the state. Between April 2018 and January 2019, plaintiffs won all five of the cases that went to trial and five separate juries awarded multi-million dollar verdicts, including huge punitive damages awards signaling that Smithfield's actions showed the corporation's intentional disregard of the rights and safety of others. In response to these lawsuits, the N.C. General Assembly amended state nuisance law to reduce available legal remedies²⁷ for nuisance and make it harder--almost impossible--for similarly situated North Carolinians to bring a nuisance action.²⁸

Outside of the courtroom, continued research underscored the threat of the lagoon and sprayfield system to public health. A 2018 study found that neighbors of industrial hog operations in eastern North Carolina have higher death rates from causes such as anemia, kidney disease, tuberculosis, and low birth weight than residents who live further away from such operations.²⁹ Researchers found that life expectancy in North Carolina communities near these operations remained low even when controlling for multiple demographic, behavioral, and socioeconomic factors.³⁰

Directed Biogas Blindly Endorsed by State Leaders

²⁵ K.E. Kunkel et al, North Carolina Institute for Climate Studies, *North Carolina Climate Science Report* 233 (Sept. 2020), <https://ncics.org/nccsr>.

²⁶ Lisa Sorg, *Partial Hog Lagoon Breach Spills 3 Million Gallons of Feces, Urine in Sampson County*, N.C. Policy Watch (15 June 2020), <http://pulse.ncpolicywatch.org/2020/06/15/partial-hog-lagoon-breach-spills-3-million-gallons-of-feces-urine-in-sampson-county/>.

²⁷ S.L. 2017-11 § 1; S.L. 2018-113 § 10.(b).

²⁸ S.L. 2018-113 § 10.(a).

²⁹ Julia Kravchenko et al., *Mortality and Health Outcomes in North Carolina Communities Located in Close Proximity to Hog Concentrated Animal Feeding Operations*, 79 *North Carolina Medical Journal* 278 (2018).

³⁰ *Id.*

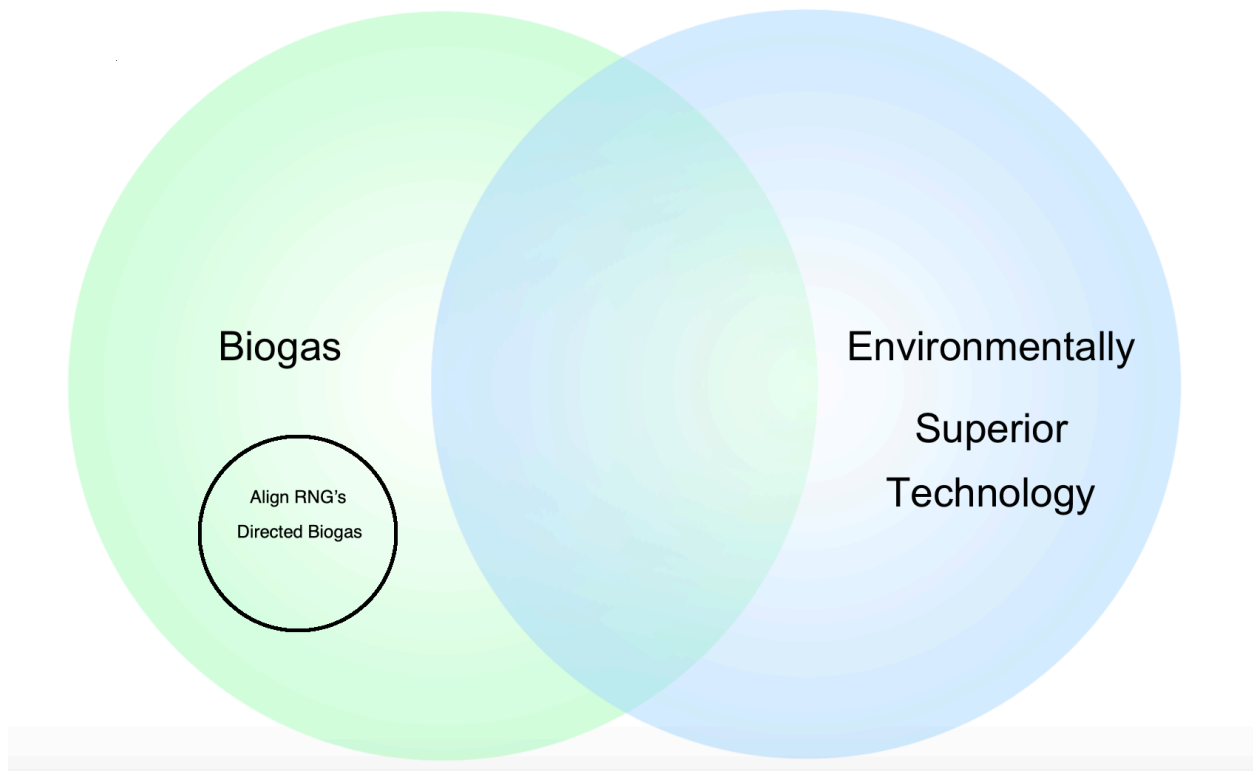
This shift to directed biogas production appears to have the blessing of North Carolina’s leaders. In 2019, the N.C. General Assembly, under pressure from biogas proponents, relaxed the “moratorium” to exempt hog operations producing biogas from requirements to install environmentally superior technology.

Meanwhile, in conjunction with efforts to combat climate change, the Cooper Administration appears poised to support further installation of anaerobic digesters to capture methane and convert it to energy.³¹ Governor Roy Cooper has demonstrated leadership in addressing the climate crisis by issuing Executive Order No. 80, among other notable actions. By tackling greenhouse gas emissions through the state Clean Energy Plan and requiring the development of a state Climate Risk Assessment and Resiliency Plan (CRARP), North Carolina can lead the way in addressing the causes of and adapting to a changing climate. The Clean Energy Plan, however, endorses swine waste to energy biogas, which relies on the lagoon and sprayfield system. Neither the Clean Energy Plan nor the CRARP acknowledge that this system, which is used in the low-lying and flood-prone region of our state, fails in storm after storm, leading to the release of millions of gallons of animal waste into floodwaters, streams and rivers in coastal North Carolina. This will continue to happen as major rain events become more frequent and severe. Hog facilities using the lagoon and sprayfield system don’t belong in the most vulnerable and flood-prone areas of our state. Our leaders must require transition away from this system to cleaner, more resilient technology for managing swine waste.

Differences between Biogas technology and Environmentally Superior Technologies

Decision-makers should not conflate biogas projects with environmentally superior technologies. The latter are designed to fix multiple problems caused by the use of the lagoon and sprayfield system. The renewable energy law, in contrast, was not intended to solve animal waste management problems; it focused on problems from another industry and different problems altogether. Consider the following Venn Diagram:

³¹ N.C. Department of Environmental Quality, *North Carolina Climate Risk Assessment and Resilience Plan* (June 2020), <https://files.nc.gov/ncdeq/climate-change/resilience-plan/2020-Climate-Risk-Assessment-and-Resilience-Plan.pdf>



As depicted, biogas technology and environmentally superior technology are not mutually exclusive. Unfortunately, industry players, project developers, and some major energy consumers appear focused exclusively on producing biogas without considering any benefits or duty to comply with environmentally superior technology standards. And directed biogas projects, like those proposed by Align RNG, make no attempt to solve the water, air, and land pollution concerns addressed by environmentally superior technologies.

Conclusion

North Carolina's communities and environment have suffered the impacts of industrial-scale hog production for too long. We support technological improvements that enable pork production without harming North Carolinians. We oppose all projects, such as directed biogas projects proposed by Align RNG that increase or fail to address the harms this industry causes to our health, quality of life, and environment.

Endorsements

Kemp Burdette
Cape Fear Riverkeeper
Cape Fear River Watch

Jovita Lee
Senior Environmental Justice Campaigner
Center for Biological Diversity

Joel Porter
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Clean Air Carolina

Veronica Oakler
Executive Director
Clean Water for North Carolina

Larry Baldwin
Crystal Coast Waterkeeper
Coastal Carolina Riverwatch

Suzannah Park
Program Director
Community Roots

Bobby Jones
President
*Down East Coal Ash Environmental and
Social Justice Coalition*

Danielle Koonce
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*Environmental Justice Community Action
Network (EJ CAN)*

Sally Lee
Deputy Director Rural Partnerships
Food Integrity Campaign

Donna Chavis
Senior Fossil Fuels Campaigner
Friends of the Earth

Emily Sutton
Haw Riverkeeper
Haw River Assembly

Naeema Muhammad
Organizing Director
NC Environmental Justice Network

Belinda Joyner
Community Activist
Northampton County

Sherri White-Williamson
Environmental Justice Policy Director
North Carolina Conservation Network

William Barber, III
Kim Porter
Co-Chairs
NC Poor People's Campaign

Gray Jernigan
Green Riverkeeper
David Caldwell
Broad Riverkeeper
Hartwell Carson
French Broad Riverkeeper
Andy Hill
Watauga Riverkeeper
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