

BDC - 2023 - SB 447 - AD Workgroup.pdf

Uploaded by: Aaron Greenfield

Position: FAV

To: Education, Energy and Environment Committee
From: Bioenergy Devco
Subject: Senate Bill 447, Anaerobic Digestion Workgroup
Date: February 15, 2023
Position: Favorable

Bioenergy Devco supports Senate Bill 447, Anaerobic Digestion Workgroup.

This testimony is offered on behalf of Bioenergy Development Company (BDC), the foremost providers of anaerobic digester solutions and is a pioneer in this sector. The core expertise of our company lies in planning, producing and constructing the plants. For over 20 years and more than 250 biogas plants, our qualified team of engineers, biologists, chemists, agronomists, designers and marketing experts has significant experience in the design, construction and operation of anaerobic digester power plants and thus offers expertise in service, consultation and biological support.

Anaerobic digestion is an important tool in meeting Maryland's admirable goal to recycle organic waste and reach our climate mitigation objectives. Not all these facilities are the same. But they all are multi-faceted: produce renewable natural gas and a digestate.

To educate and ensure that anaerobic digesters remain effective and environmentally sustainable, Maryland has an opportunity to develop with this emerging industry. Senate Bill 447 appropriately establishes an anaerobic digester workgroup to:

- review current processes and regulations
- identify infrastructure needs
- recommend regulations and requirements appropriate for these facilities
- identify categories of digestate and appropriate uses in recycling the material
- Incentivize the use of digestate for use as agricultural fertilizer and manufactured topsoil

Anaerobic digesters are beneficial in processing a variety of organic materials such as food waste, food processing residuals such as cooking oil, animal manure, and solid municipal waste. These materials can be processed to capture the methane gas emissions and produce a remaining digestate that is free from foul odors and harmful bacteria. The composition and makeup of the digestate is largely dependent on the organic material that is fed into the digester. While most digestate can be effectively used as an organic soil amendment, some may contain materials that limit its use to specific applications. Classifying these types of digestate will help in identifying and assigning appropriate uses.



Forward thinking farmers promoted early development of small-scale anaerobic digesters. Custom-made digesters allowed them to capture the methane gas for a beneficial reuse as fuel for equipment or to generate electricity around the farm. These first-generation custom-made systems are generally inefficient in capturing gas emissions and use earthen lagoons as containment vessels that are prone to environmental issues. As we look to expand the use of anaerobic digestion, we should develop standards for new and proposed anaerobic digestion systems that will maximize their efficiency and environmental sustainability.

Bioenergy Devco is confident that passage of this bill will address current and future needs of this important industry.

For these reasons, Bioenergy Devco respectfully requests a favorable report on Senate Bill 447.

For additional information, please contact Aaron J. Greenfield at 410.446.1992

Support of SB 447 - Anaerobic Digestion Workgroup.

Uploaded by: Colby Ferguson

Position: FAV



Maryland Farm Bureau, Inc.

3358 Davidsonville Road • Davidsonville, MD 21035 • (410) 922-3426

February 15, 2023

To: Senate Education, Energy & the Environment Committee

From: Maryland Farm Bureau, Inc.

Re: **Support of SB 447 - Anaerobic Digestion Workgroup**

On behalf of our Farm Bureau member families in Maryland, I submit this written testimony in support of SB 447. This bill creates an Anaerobic Digestion Workgroup to study, identify, examine, and make recommendations on the aspects of anaerobic digestion in Maryland. There would be 11 members of the workgroup and includes a member of the Maryland Farm Bureau. The workgroup will be staffed by MDA and will study this area and make recommendations on the best options for Maryland. These recommendations will be sent to the Governor and the General Assembly by December 30, 2023.

Looking at opportunities to use this technology to help farmers capture methane to generate renewable fuels and energy is a win, win for the state. As the state looks to divert food waste from the landfills, these types of digesters would be effective at taking those higher percentage liquid products and incorporating them with farm products like dairy manure.

MARYLAND FARM BUREAU SUPPORTS SB 447 & REQUESTS A FAVORABLE REPORT

A handwritten signature in black ink, appearing to read "Colby Ferguson". The signature is stylized and includes a long horizontal flourish at the end.

Colby Ferguson
Director of Government Relations

For more information contact Colby Ferguson at (240) 578-0396

SB 447 (Anaerobic Workgroup) - Support Letter - FI

Uploaded by: Grayson Middleton

Position: FAV



Educate. Advocate. Innovate.

Date: February 14, 2023
To: Members of the Senate Committee on Education, Energy, and the Environment
From: Holly Porter, Executive Director
Re: SB 0447 – Anaerobic Digestion Workgroup – **SUPPORT**

Delmarva Chicken Association (DCA) the 1,600-member trade association representing the meat-chicken growers, processing companies, and allied business members on the Eastern Shore of Maryland, the Eastern Shore of Virginia, and Delaware supports SB 447 and urges a favorable committee report.

The chicken community has been a leader in sustainability among agricultural enterprises for over three decades. We were among the first group in the region to widely adopt solar energy, and were among the first to seriously study and implement ways in which our waste and bi-product could be minimized and reused. Chicken litter, which was once a nuisance for poultry farmers, is now a widely sought after and easily profitable soil amendment. Perdue Farms was a pioneer when they developed one of the first manure pelletizing plants in the country, whereby chicken litter was processed into dry pellets for use as fertilizer by farmers and home gardeners. This product was shipped around the country, and diverted innumerable tons of chicken litter from the region. Unfortunately, it never turned a profit, and that Seaford, DE facility is once again serving as ground zero in the region for a new and exciting technology which will once again (albeit more efficiently) turn waste into a valuable product through anaerobic digestion. This technology also has major potential for the Maryland chicken community.

We at DCA fully support the use of anaerobic as one of many valuable uses for food and animal waste, particularly from poultry processing plants. This technology has been proven as an energy efficient process whereby waste is converted into clean burning natural gas and nutritious soil amendments. This is also a green technology. Anaerobic digestion diverts waste from treatment plants and landfills and reduces the need to obtain natural gas from other sources, such as fracking.

For more than 20 years, anaerobic digestion has been successfully implemented throughout the European Union and receives substantial incentives both from the EU and its constituent nations as a renewable energy source. As of 2016, there were approximately 17,500 anaerobic digestion plants throughout the EU, with most of them in Germany. These countries have seen significant decreases in food and animal waste going to landfills and treatment plants, and the byproduct is widely regarded as a green and even preferable alternative to commercial fertilizer.

Anaerobic digestion is still in its infancy in the United States, and only a handful exist in Maryland, despite the Eastern Shore having one of the highest concentrations of poultry farms in the United States. To fully take advantage of this technology and its vast potential, there is a need for stakeholders across the state and from a variety of backgrounds to come together and study how it can be implemented, regulated, and potentially incentivized. This legislation will bring together farming organizations, the chicken community, experts in the field, MDA, MDE, members of the Senate and House, and many others to recommend the appropriate implementation and standardization of this renewable energy source to the Governor and General Assembly. To be clear, this is not a stamp of



Educate. Advocate. Innovate.

approval or incentive program, nor does it have legal ramifications. We are simply asking to come together under an official capacity to investigate the potential of this technology.

We urge a **favorable** vote on SB 0447.

Should you have any additional questions, please feel free to contact me at porter@dcachicken.com or 302-222-4069 or Grayson Middleton at middleton@dcahicken.com or 410-490-3329.

Sincerely,

Holly Porter
Executive Director

Senator Carozza Bill- Support Letter.docx.pdf

Uploaded by: Heidi Anderson

Position: FAV



UNIVERSITY OF MARYLAND EASTERN SHORE
Office of the President

February 10, 2023

Education, Energy and Environment Committee

As President of the University of Maryland Eastern Shore located in Princess Anne, Somerset County, please accept this letter indicating our strong support for Senate Bill 447, Anaerobic Digestion Workgroup.

The purpose of this bill is to establish a workgroup to determine and review the processes and current regulation in this matter. In addition, this workgroup would make recommendations and requirements about these facilities. We know that anaerobic digesters are beneficial in breaking bacteria down into organic matter. Ensuring there are appropriate standards, requirements and criteria for these systems will maximize their efficiency and environmental sustainability.

Our mission at UMES strives to provide a sustainable environment on our campus and the surrounding communities. As such, we are committed to teach sustainable development concepts, encourage research on sustainable development issues, create a greener campus, and support sustainability efforts within our local community. Thus, Senate Bill 447, calling for the creation of an anaerobic digestion workgroup is complementary to our endeavors and one in which we fully support.

Please call if I can answer any questions you may have or be of further assistance.

Respectfully,

A handwritten signature in black ink, reading "Heidi M. Anderson". The signature is written in a cursive style.

Dr. Heidi M. Anderson
President University of Maryland Eastern Shore

SB447 - RMC Support Testimony - Anaerobic Digestio

Uploaded by: Megan D'Arcy

Position: FAV



Susan O'Neill, Chair

Charlotte Davis, Executive Director

Testimony in Support of
Senate Bill 447 – Anaerobic Digestion Workgroup
Education, Energy, and the Environment Committee
February 15, 2023

The Rural Maryland Council **supports** Senate Bill 447 – Anaerobic Digestion Workgroup. This bill will establish an Anaerobic Digestion Workgroup to study, identify, examine, and make recommendations on certain aspects of anaerobic digestion.

Anaerobic digestion is a biological method to create renewable energy, in the form of methane (CH₄)–enriched biogas, from organic rich substrates, such as manure, food waste, and wastewater sludge. The Rural Maryland Council has been working to develop more relationships with farmers and institutional systems in support of the use of anaerobic digestion. There are currently a handful of active anaerobic digester systems in Maryland and the findings from this Workgroup may lead to greater support and buildout of these beneficial systems.

In 2013, ECOCORP, Inc. completed the construction of an anaerobic digester facility at the Eastern Correction Institution in Somerset County. The anaerobic digester supplies a portion of the power needed at the prison. The digester uses heat to deodorize and sterilize manure, while using the methane gas it produces to generate electricity.

In 2018, the Department of Agriculture awarded a \$1.85 million grant to Kilby Farm, LLC in Cecil County to install an anaerobic digester at its 400-dairy operation. The project represents a retrofit to an existing, but non-operational, digestion system that created a reliable power supply for the farm throughout the year. A digester can benefit farmers as it can provide a new source of income for them - biomethane, electricity, heat, and biofuel can be sent to the department of energy to be sold to other farms. Additionally, the use of cow manure in the methane digester reduces the greenhouse gas emissions that would otherwise be produced in livestock operations.

In 2021, Bioenergy Development Company completed the construction of an anaerobic digestion facility on the Maryland Food Center campus in Jessup. This is largest anaerobic digester in the state and has the potential to divert approximately 125,000 tons of food wastes generated per year from landfill disposal and produce enough energy to power 4,800 homes. In addition to reducing greenhouse gas emissions and creating renewable energy, it will also improve Maryland's recycling processes and create up to 50 new jobs.

The Council supports and encourages anaerobic digestion technology to benefit farmers, institutional systems, and the environment. The Rural Maryland Council respectfully requests your favorable support of Senate Bill 447.

The Rural Maryland Council (RMC) is an independent state agency governed by a nonpartisan, 40-member board that consists of inclusive representation from the federal, state, regional, county and municipal governments, as well as the for-profit and nonprofit sectors. We bring together federal, state, county and municipal government officials as well as representatives of the for-profit and nonprofit sectors to identify challenges unique to rural communities and to craft public policy, programmatic or regulatory solutions.

The Maryland Recycling Network Response - SB447 An

Uploaded by: Peter Houstle

Position: FAV



February 14, 2023

To: Maryland Senate Education, Energy, and the Environment Committee
Re: SB447 Anaerobic Digestion Workgroup

The Maryland Recycling Network promotes sustainable reduction, reuse and recycling (the 3 "R's") of materials otherwise destined for disposal and the purchase of products made with recycled material content. We achieve these goals through education programs, advocacy activities to affect public policy, technical assistance efforts, and the development of markets to purchase recycled materials and manufacture products with recycled content.

Our members are county and municipal government recycling and organics materials managers, private sector companies engaged in recycling and organics materials management, and citizens who support recycling and organics materials management. We support both composting and anaerobic technologies to manage food and yard waste. We have a long history of supporting food waste recovery legislation in Maryland including HB 264, the Organics Recycling and Waste Diversion – Food Residual bill that was enacted into law in 2021. We have direct experience operating recycling and composting programs at the county and municipal government level. We know the ins and outs of recycling and organics materials management in Maryland. Our experience informs our comments.

We support SB 447. Anaerobic digestion is an important tool in turning organic "waste" materials into useful products. The Work Group established by this bill, with its focus on increasing the use of digestate created at anaerobic digestion facilities, will help create a solid foundation for organics material management in Maryland. This Work Group will build upon the accomplishments of the 2021 Act. We look forward to passage of this bill.

The Maryland Recycling Network stands ready to serve as a sounding board and resource for legislators and others interested in pursuing our mission. Please do not hesitate to contact me via email phoustle@marylandrecyclingnetwork.org, phone 301-725-2508 or mail - MRN, PO Box 1640, Columbia MD 21044 if you have any questions or would like additional information regarding the above.

We look forward to working with you to continue the strides we have all made to improve Maryland's recycling programs in a time- and cost-effective manner.

Sincerely,

A handwritten signature in black ink that reads "Peter M. Houstle". The signature is fluid and cursive, with the first name being the most prominent.

Peter M. Houstle
Executive Director

SB 447 - Carozza Testimony_FINAL.pdf

Uploaded by: Senator Mary Beth Carozza

Position: FAV

MARY BETH CAROZZA
Legislative District 38
Somerset, Wicomico,
and Worcester Counties

Education, Energy, and
the Environment Committee



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James Senate Office Building
11 Bladen Street, Room 316
Annapolis, Maryland 21401
410-841-3645 · 301-858-3645
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Executive Nominations Committee

THE SENATE OF MARYLAND
ANNAPOLIS, MARYLAND 21401

February 15, 2023

The Senate Education, Energy, and Environment Committee
SB 447 Anaerobic Digestion Workgroup
Statement of Support by Bill Sponsor Senator Mary Beth Carozza

Thank you Chair Feldman, Vice Chair Kagan, and my fellow members of the distinguished Senate Education, Energy, and Environment Committee for this opportunity to present Senate Bill 447 – Anaerobic Digestion Workgroup, and to respectfully ask for your support for this bill

SB 447 which would create a workgroup composed of all the stakeholders to identify recommendations for the thoughtful expansion of anaerobic digesters throughout the state. The workgroup would look at the design, construction and operation of these facilities; identify and examine categories of digestate produced during the anaerobic digestion, and appropriate uses to recycle the digestate; and examine options for incentivizing the use of the digestate as agricultural fertilizer and manufactured topsoil.

The digestate produced by anaerobic digestion currently is classified as an approved soil conditioner under the Maryland Commercial Fertilizer Law. The workgroup would consider incentives for the use of this organic soil amendment produced by the process.

Anaerobic digestion is a process through which bacteria breaks down organic matter, such as animal manure, wastewater biosolids, and food wastes. This process creates a product known as biogas, and when purified, biogas is a renewable energy that can be used to provide heat, generate electricity, fuel our vehicles, and create other energy products.

Anaerobic digestion is hugely beneficial to our farmers in ways that more traditional waste management systems simply do not offer. For example, anaerobic digesters can destroy more than 90 percent of disease-causing bacteria, helps keep the soil healthy, and protects local water resources by reducing nutrient run-off. It also allows farms to be more energy independent.

As an example, Millennium Farms is a 50-acre farm with an anaerobic digester facility that has been in operation in 2017. This facility converts 1,200 tons of poultry litter from the farm into a nutrient-rich soil conditioner sold under the brand name “Element Soil.” Based on the success of this facility, the operating company is currently working on building a second, larger anaerobic digestion facility in Somerset County and intends to work on various agricultural-related projects in cooperation with the University of Maryland Eastern Shore.

According to the EPA, anaerobic digesters on livestock farms generated enough energy to supply 53,000 homes in 2013 alone. That was 10 years ago. This is an untapped renewable energy source in Maryland, and the establishment of the Anaerobic Digestion Workgroup to include all stakeholders would address current and future needs of this important industry.

Mr. Chair and Vice Chair, I respectfully urge the Senate Education, Energy, and Environment Committee Members for a favorable report on Senate Bill 447. Thank you for your kind attention and consideration.

SB 447_Planet Found_Fav (02-15-23).pdf

Uploaded by: Steve Baccino

Position: FAV



February 15, 2023

**SENATE EDUCATION, ENERGY, AND THE ENVIRONMENT COMMITTEE
SB 447 – Anaerobic Digestion Workgroup**

Statement in Support

Planet Found Energy Development LLC (“PFED”) **SUPPORTS** the provisions contained in SB 447, which will establish an Anaerobic Digestion Workgroup to study, identify, examine and make recommendations on certain aspects of anaerobic digestion and requiring the Workgroup to report its findings and recommendations to the Governor and General Assembly on or before December 30, 2023.

SB 447 will support Planet Found Energy Development LLC. PFED is a Maryland-based entity formed by scientists, farmers, and businesspeople (in cooperation with the University of Maryland Eastern Shore) dedicated to developing poultry litter management technologies that will safeguard the environment, economic viability, employment opportunities, and the long-term stability and integrity of agricultural communities in the Chesapeake Bay Region and beyond.

Located in Somerset County and in operation since 2017, PFED operates a farm-scale anaerobic digestion and nutrient capture system that converts digestate, a natural byproduct of the anaerobic digestion process, into a nutrient-rich soil conditioner. PFED distributes this digestate to bulk and retail markets under the brand Element Soil.

In addition to its nutrient capture system, PFED’s farm-scale anaerobic digestion system and technology biologically produces biogas from 1,200 tons of poultry litter from Millennium Farm annually, which rather than being released into the atmosphere can generate renewable energy in the form of electricity or be upgraded to renewable natural gas.

PFED spent several years researching and developing the chemistry to produce methane from poultry litter. The waste has been difficult to successfully digest, with only a few poultry litter anaerobic digesters operating in the United States.

On behalf of PFED, we respectfully request a favorable vote on SB 447.

MDE (SB0447) Support.pdf

Uploaded by: Tyler Abbott

Position: FAV



**The Maryland Department of the Environment
Secretary-Designee Serena McIlwain**

***Senate Bill 447
Anaerobic Digestion Workgroup***

Position: Support
Committee: Education, Energy, and the Environment
Date: February 15, 2023
From: Gabrielle Leach

The Maryland Department of the Environment (MDE) **SUPPORTS** Senate Bill 447. The bill would require the convening of an Anaerobic Digestion Workgroup.

The purpose of the work group would be to:

1. study the current regulations regarding anaerobic digestion;
2. study the process of anaerobic digestion;
3. identify and examine categories of digestate produced during anaerobic digestion;
4. identify and examine appropriate uses to recycle the digestate produced during anaerobic digestion;
5. identify and examine options for incentivizing the use of the digestate produced during anaerobic digestion as agricultural fertilizer and manufactured topsoil;
6. identify the infrastructure needs for the responsible construction of an anaerobic digestion facility; and
7. make recommendations regarding the requirements for the responsible construction and operation of an anaerobic digestion facility.

The workgroup would include representatives from the public, private, and non-profit sectors as well as MDE, MDA, and MEA. After approximately a sixth month period, the workgroup would be required to report its findings and recommendations to the Governor and General Assembly.

The findings from SB 447 could be a valuable resource for municipalities, private companies, and other organizations interested in, or already operating, anaerobic digesters. These findings could help organizations better understand the capital requirements/start-up costs as well as operational costs and maintenance required to operate an anaerobic digester. In addition to this, anaerobic digestion does count as recycling in Maryland, and can be an important tool to help counties meet their recycling obligations under the Maryland Recycling Act.

For the reasons detailed above, MDE urges a **FAVORABLE** report for Senate Bill 447.

SB447 - Clean Water Action - FWA.pdf

Uploaded by: Emily Ranson

Position: FWA

SB447: Anaerobic Digestion Workgroup
Senate Education, Energy, and the Environment Committee
February 15, 2023

Favorable With Amendment

Dear Chairman Feldman and Members of the Committee

Clean Water Action has deep concerns with SB447, the Anaerobic Digestion Workgroup. In the interest of furthering the conversations:

Membership Concerns

The workgroup fails to include environmental, health, science, and impacted community representation. While the Institute for Local Self Reliance is a great resource on waste policy, they were not consulted before being named as a member of the workgroup. We are concerned that without sufficient representation and with enough numbers to have a significant voice on the workgroup, that concerns about in which neighborhoods facilities are sited, the impact of biogas on the environment and community health, and other concerns will not be considered.

At the very least, members should be added representing soil conservation scientists, community members from environmental justice areas, public health, a research institution like the Hopkins Center for a Livable Future, and environmental organizations.

Unfortunately, we do not feel like we have sufficient time to suggest which voices need to be included to sufficiently balance the industry interests on the workgroup and to confirm with those voices that they have the time and capacity to engage with the workgroup.

Outcome Concerns

The scope given for the workgroup is far too narrow to deliver a useful outcome for the State of Maryland regarding anaerobic digestion policy. The workgroup's mandate does not speak to issues of scale; contamination, especially of PFAS; distribution; public health impacts and equity; siting; and carbon management. The workgroup is so narrowly focused on anaerobic digestion and digestate, yet this group seems like it would benefit from an expanded scope to incorporate compost. The workgroup is asked to identify and examine appropriate uses to recycle the digestate - would that be composting? And if so, why is there no representation of The MD-DC Compost Council on this workgroup?

The workgroup is expected to identify and examine options for incentivizing the use of digestate as agricultural fertilizer and manufactured topsoil - but it will not be equipped to do so without the presence of soil scientists as members of the workgroup. Should digestate be incentivized as an agricultural fertilizer? Are there any concerns that contaminated feedstock will pose problems for using digestate as an agricultural fertilizer? Does the workgroup have sufficient expertise to speak to the benefits and concerns about using digestate as an agricultural fertilizer or manufactured topsoil?

We would like to echo here the concerns of the Institute of Local Self Reliance:

We believe that, to be successful in making infrastructure recommendations for organic materials management, this bill would have to be completely rewritten to change the Workgroup's work mandate and composition.

Clean Water Action is concerned that this workgroup will require significant revision to adequately balance workgroup membership and scope, and encourages the Committee not to pass this legislation without substantive amendments, which will be difficult within the legislature's time constraints.

Thank you,

Emily Ranson
Maryland Director
Clean Water Action
eranson@cleanwater.org
410-921-9229

SB0447_FWA_NWRA_Anaerobic Digestion Workgroup.pdf

Uploaded by: Pam Kasemeyer

Position: FWA

Maryland-Delaware Solid Waste Association
a chapter of the



TO: The Honorable Brian J. Feldman, Chair
Members, Senate Education, Energy, and the Environment Committee
The Honorable Mary Beth Carozza

FROM: Pamela Metz Kasemeyer
J. Steven Wise
Danna L. Kauffman
Andrew G. Vetter
410-244-7000

DATE: February 15, 2023

RE: **SUPPORT WITH AMENDMENT** – Senate Bill 447 – *Anaerobic Digestion Workgroup*

The Maryland Delaware Solid Waste Association (MDSWA), a chapter of the National Waste and Recycling Association, is a trade association representing the private solid waste industry in the State of Maryland. Its membership includes hauling and collection companies, processing and recycling facilities, transfer stations, and disposal facilities. MDSWA and its members **support with amendment** Senate Bill 447.

Senate Bill 447 establishes an Anaerobic Digestion Workgroup, staffed by the Maryland Department of Agriculture (MDA). The Workgroup is charged with: studying the current regulations regarding anaerobic digestion and the process of anaerobic digestion; identifying and examining categories of digestate produced during anaerobic digestion and the appropriate uses to recycle the digestate produced as agricultural fertilizer and manufactured topsoil; identify infrastructure needs for the construction of an anaerobic digestion facility; and make recommendations regarding requirements for the construction and operation of an anaerobic digestion facility. The Workgroup must report its findings and recommendations to the Governor and the General Assembly by December 30, 2023.

Organic waste management, including the responsible and effective recycling of organic waste has been the focus of consideration by the General Assembly in recent years. Anaerobic digestion is an approach to organic waste management that holds the potential to greatly increase the effective and environmentally responsible management of this waste stream. However, to effectively complete the charges and objectives of this workgroup, it is critical that all relevant stakeholders in the Maryland waste and recycling sectors are reflected in the membership of the workgroup. To that end, MDSWA requests that the bill be amended to include a representative from MDSWA on the workgroup, given MDSWA's member involvement in all aspects of the State's waste and recycling infrastructure and service. With the adoption of the following amendment, a favorable report is requested.

On page 2, in line 1, strike "two" and substitute "three", in line 3, strike "and", and after "Network" in line 4, insert "and one of the members designated by the Chairman of the Maryland Delaware Solid Waste Association"

SB447_EEE_AD_UNF_HoCoCA.pdf

Uploaded by: Liz Feighner

Position: UNF



HoCoClimateAction.org
Howard County, Maryland

Testimony in Opposition of – SB447 - Anaerobic Digestion Workgroup

Hearing Date: Feb 15, 2023

Bill Sponsor: Senators Carozza, Hester, and Gallion

Committee: Education, Energy, and the Environment

Submitting: Howard County Climate Action

Position: Oppose

HoCo Climate Action is a 350.org local chapter and a grassroots organization representing almost 1,400 advocates, and a member of [the Climate Justice Wing](#) of the [Maryland Legislative Coalition](#).

We have concerns about [SB447 - Anaerobic Digestion Workgroup](#). We have extreme concerns about the makeup of the workgroup – no environmental, health scientists or Environmental Justice groups are included – mainly industry proponents. –And at least one of the groups listed wasn't even consulted about the workgroup. This proposed workgroup is definitely not balanced and voices of local communities with environmental justice concerns are not being represented. We also question why this workgroup is being formed since the state has spent money on two studies ([Financial Feasibility done by UMD](#) and [Permitting guidance for AD facilities](#)) that were already completed.

HoCo Climate Action

HoCoClimateAction@gmail.com -

Submitted by Liz Feighner, Steering and Advocacy Committee, Columbia MD

www.HoCoClimateAction.org

Testimony in Opposition of SB0447.pdf

Uploaded by: maria payan

Position: UNF



Testimony in Opposition of SB0447

Anaerobic Digestion Workgroup

February 13, 2023

Dear Members of the Committee:

Thank you for the opportunity to submit testimony in **opposition to SB0447**, on behalf of Sentinels of Eastern Shore Health (SESH), whose mission is to facilitate a truly healthy community where every member of the community has a role in a participatory decision making process, especially things that may impact public health or deteriorate common resources to be preserved for future generations.

To date, there have been numerous studies done on this topic, including a Financial Feasibility Study from University of Maryland, as well as Maryland Department of the Environment's Permitting Guidance for Maryland Anaerobic Digestion Facilities. The University of Maryland also has a test facility located in Pocomoke, operated by Planet Found Energy Development LLC.

To date, we have invested many dollars on these studies. We are extremely concerned and have a few questions that we would like to raise for the committee:

1. **Why do more tax-payer dollars need to be used to fund more research?**
2. **Why were groups, like the Institute For Local Self-Reliance not consulted before this bill was drafted?**
3. **Why is this work group lacking environmental and public health scientists, Maryland Commission on Environmental Justice and Sustainable Communities (CEJSC) and community stakeholder groups?**

The work group makeup is **heavily biased**, even including a trade group for the industry and industry leaders, but seems to be lacking in scientists, public health experts, Environmental Justice leaders, and community stakeholders. The language in the bill seems to have a predetermined outcome before the work starts, tasking the group to **identify and examine options for incentivizing the use of the digestate produced during anaerobic digestion as agricultural fertilizer and manufactured topsoil.**

Again, we are talking about incentives before the work group ever meets, even though there have been several studies done already.

This workgroup has also not been tasked with researching various health and safety concerns. There is no mention of research for PFAs/PFOAs in the digestate (by product)–the forever chemicals which are contaminating our farmland and also found in biosolids- an “approved soil amendment” which farmers are also using on their fields.

There is also no mention of research on the emissions or safety in terms of siting. Any major industry seeking incentives to operate should have **clear, peer reviewed and third party study information that their business will not adversely affect local residents.** The proposals we have seen to date on the Delmarva Peninsula are being sited in communities which have no political power and already are considered overburdened by the EPA.

As we’ve seen before in legislative history, workgroups are not effective and end up wasting tax-payer dollars on industry-funded schemes. For all these reasons, **we strongly oppose SB 0447 and ask that the committee does not support this bill.**

Thank you for your time and consideration.

Sincerely,

Maria Payan
Co-founder Sentinels of Eastern Shore Health

Gabby Ross, Assateague Coastkeeper, Assateague Coastal Trust

Monica Brooks, Concerned Citizens Against Industrial CAFOS (CCAIC)

Alex Villazon, Climate & Justice Legal Fellow, Waterkeepers Chesapeake

Protectors of the St. Martin River

Sources:

1. *Financial feasibility of alternative animal waste management ...* (n.d.). Retrieved February 13, 2023, from <https://arch.umd.edu/sites/default/files/docs/publications/Financial%20Feasibility%20of%20AWTF%20Projects%20January%202018.pdf>
2. Lansing, S., & Hassanein, A. (n.d.). *Factsheet PFED Poultry Litter Digester*. Retrieved February 13, 2023, from https://mda.maryland.gov/resource_conservation/counties/UMD%20Factsheet%20PFED%20Poultry%20Litter%20Digester.pdf
3. *Permitting guidance for Maryland anaerobic digestion facilities*. (n.d.). Retrieved February 13, 2023, from <https://mde.maryland.gov/programs/land/RecyclingandOperationsprogram/Documents>

[/Anaerobic%20Digestion%20Facility%20Permitting%20Guidance%20-Revised%20Sept%202022.pdf](#)

4. <https://enst.umd.edu/extension/anaerobic-digestion>

_ILSR-SophiaJones HB1070 Testimony-OPPOSE.pdf

Uploaded by: Sophia Jones

Position: UNF

**TESTIMONY TO THE MARYLAND SENATE COMMITTEE ON EDUCATION,
ENERGY, AND THE ENVIRONMENT**

SB0447 – Anaerobic Digestion Workgroup

Position: Unfavorable

February 15, 2023 Public Hearing

Sophia Jones, Policy Associate, Composting for Community Initiative, sjones@ilsr.org

Institute for Local Self-Reliance 1200 18th Street, NW, Suite 700, Washington, DC 20036

Dear Chair Feldman, Vice Chair Kagan, and Members of the Committee,

My name is Sophia Jones and I am submitting testimony on behalf of the Institute for Local Self-Reliance, a national nonprofit that has been working to advance infrastructure for organic materials processing in Maryland for many years.

We served on the Yard Waste, Food Residuals, and Other Organic Materials Diversion and Infrastructure Study Group from 2018 to 2019 and we are honored to be named as one of the members of the Workgroup. **Unfortunately, the Institute for Local Self-Reliance is opposing SB 0447 – Anaerobic Digestion Workgroup for the following reasons.**

Firstly, we are not in favor of study and work groups in general because they delay implementation of needed policy and they generally come up with skewed reports and recommendations that reflect the vested interests at the table. Minority viewpoints are limited and seldom seriously considered in the outputs and outcomes of such endeavors. Participation in these conversations is often exhausting and fruitless for representatives of minority viewpoints.

Second, a minor point to add is that the Institute for Local Self-Reliance was not consulted before being explicitly named as a member of this Workgroup. Though we do consider it important for us to serve in order to balance the vested interests at the table, there are also other groups that could be represented to balance the Workgroup, for example, Future Harvest/Chesapeake Alliance for Sustainable Agriculture.

Third, we question the impetus for the bill and the narrow focus on anaerobic digestion, as if it's the sole technology or system to handle the state's organic materials. The Workgroup's work mandate is too severely limited.

To be clear, we are supporters of anaerobic digestion as an organics management option. We are primarily concerned about the likelihood of producing contaminated products, an issue more commonly prevalent in centralized facilities (including anaerobic digesters) that accept

contaminated feedstocks and that are coupled with depackagers. When it comes to quality soil amendments, bigger is definitely not better. PFAs as well as physical and other chemical contamination should be a primary issue area addressed by a Workgroup focused on organics processing infrastructure. This is especially critical given the rising concern of PFAs in biosolids and the serious potential impact on farmlands.

To be more effective and balanced, the Workgroup would need a much wider scope, such as addressing markets for soil amendments of all types. We believe that the former Yard Waste, Food Residuals, and Other Organic Materials Diversion and Infrastructure Study Group already studied organics management options, including anaerobic digestion. We don't need to reinvent the wheel, especially one that wasn't particularly fruitful after two years. Many of that Study Group's recommendations have yet to be addressed.

As written, this bill includes a narrow representation of interests in this field and could result in the facilitation of one company (Bioenergy Devco) gaining almost monopoly control of the market, shutting out farmers and other appropriate organics management technologies and systems. We must pose the question – why would the State spend its resources focusing on building markets for just one industry and, essentially, one company?

We believe that, to be successful in making infrastructure recommendations for organic materials management, this bill would have to be completely rewritten to change the Workgroup's work mandate and composition. For these reasons, we must, sadly, oppose this bill.

Sincerely,

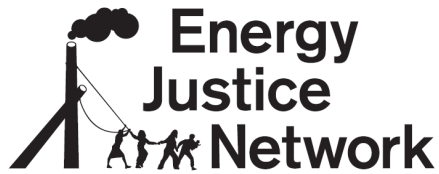
A handwritten signature in black ink, appearing to read 'Sophia Jones', written in a cursive style.

Sophia Jones
Policy Associate, Composting for Community Initiative
Institute for Local Self Reliance

SB447_EJN_Compton_UFA.pdf

Uploaded by: Stephanie Compton

Position: UNF



RE: Testimony in **Opposition of SB447**

02/14/2023

Stephanie Compton
2936 Wyman Pkwy.
Baltimore, MD 21211

Thank you for the opportunity to offer my opposition to the Anaerobic Digestion Workgroup. In my research on the comparison of Anaerobic Digestion versus Aerobic Composting, the priority of sustainably managing materials should be put on composting.

Anaerobic digesters compost (or "digest") organic waste in a machine that limits access to oxygen (hence the "anaerobic" part), encouraging the generation of methane and carbon dioxide by microbes in the waste. This digester gas (which also comes contaminated with hydrogen sulfide) is then burned as fuel to make electricity. Digesters aren't widely used yet, but tend to be used for sewage sludge at sewage treatment plants and for animal waste on farms. Digesting organic waste doesn't avoid the need to handle the digested material (a mostly solid, but wet, byproduct known as "digestate").

There are many problems with animal waste digesters, including air pollution, methane leakage, and leaching of nutrients from digestate. Digesters should not be supported with renewable energy subsidies, as they compete with solar and wind power, and could support inappropriate waste management practices, depending on the feedstock and use of the digestate.

With regard to methane leakage, methane is a serious global warming problem, since [methane is 86 times worse than CO2](#) for the climate over a 20-year time frame. If just [2.8%](#) of methane from a natural gas system leaks out, it's understood to be worse for the climate than coal. Anaerobic digesters are known to leak about 2-3% of the methane created by their process. ([more below](#))

There are four main feedstocks often considered for anaerobic digestion. Here's is what they are and what we believe is the most appropriate role for them:

- **Animal waste:** For wet animal wastes (cow and pig manure), digestion can be one of the better waste management options (compared to lagoons). For poultry litter, it makes no sense, because water needs to be added to make it wet enough (sometimes, they propose sewage effluent). These are often on larger (factory) farms (a.k.a. Confined Animal Feeding Operations, or CAFOs) since they're expensive and require "renewable" energy subsidies (like being in a state Renewable Portfolio Standard). Large digesters are used to make [factory farms](#) more viable. Consequently, advocates of small family farms and of sustainable agriculture see digesters as a Trojan horse that pretends to solve a waste management

problem while enabling factory farms to invade the community. Nonetheless, if the digested waste is not contaminated with toxins (such as arsenic if it's used in poultry feed), then the digestate might be acceptable for use as fertilizer or soil amendment. Read the Food and Water Watch factsheet for a strong critique of manure digesters: [Hard to Digest: Greenwashing Manure into Renewable Energy](#)

- **Sewage sludge:** Many sewage treatment plants digest their [sewage sludge](#), then rename it "biosolids" and call it "Class A" if it passes a pathogen test, as if that makes it safe for use in gardens, soil amendment, etc. Pathogens can regrow in this heat-treated sludge, and the toxic metals and other chemicals don't vanish in the digestion process. This digested sludge does not belong being exempted from waste regulation and ought to be placed in monofills (dedicated cells at landfills), not "beneficially used" in agriculture (or in landscaping, filling strip mines, bagged and sold as fertilizer, etc.).
- **Source separated organics (SSO) [food scraps and yard waste]:** These materials ought to be aerobically composted, but anaerobic digestion could make sense in urban areas where land for aerobic composting is not available. Digested SSO could be appropriate for compost uses, but needs to be aerobically composted after digestion to condition it. Food scraps and yard waste should never be mixed with sewage sludge ("biosolids"), since they're much cleaner and shouldn't be blended with more toxic sludges. Doing so also makes it ineligible as compost under organic certification standards, which bars sewage sludge as fertilizer.
- **Municipal solid waste (MSW), or the "organic fraction" of MSW left over after efforts to remove recyclables:** The most responsible way to manage MSW is with a [zero waste hierarchy](#) that leaves little waste in the "black bin," researches what is in that waste stream, then mechanically pulls out additional recyclables before digesting and aerobically composting the remaining residual fraction prior to landfilling. This ensures that we won't have gassy, stinky landfills. However, plans for any mechanical separation and/or biological stabilization (composting or digestion) processes usually result in the digestate being burned or marketed as fuel pellets or as fertilizer. Some communities have made the mistake of trying to end source separation and have all trash, recyclables, and compostable thrown into the same bin, with the idea that machines and workers at conveyor belts will sort it all out. This idea is a terrible failure. Source separation is vital, and digestion of MSW should only be a processing step to stabilize waste before landfilling. For more info, read the reports under the "Getting the back end of the zero waste hierarchy right" section of our [zero waste page](#) and explore the detailed [zero waste hierarchy](#) we developed.

Digesters are only marginally effective at reducing problems with odors, pathogens and greenhouse gas emissions from animal waste or sewage sludge, but they are incapable of making any chemical contaminants in the wastes go away. Digesters aren't emissions-free. They are known to emit nitrogen and sulfur oxides, particulate matter, carbon monoxide and ammonia.

Living next to a digester could be unpleasant, particularly if located in a residential neighborhood or if the facility would be large -- attracting manure-hauling trucks from around the region. Some proposals for digesters have been fought off by community opposition.

Estimated air emissions data on digesters can be found here on page 3-12:

Lusk, P. (1998). [Methane Recovery from Animal Manures: A Current Opportunities Casebook](#). (3rd Edition. NREL/SR-25145. Golden, CO: National Renewable Energy Laboratory. Work performed by Resource Development Associates, Washington, DC.

Critiques of Anaerobic Digesters:

- [Hard to Digest: Greenwashing Manure into Renewable Energy](#) (Food and Water Watch, Nov. 2016)
 - [Methane Digesters and Concentrated Animal Feeding Operation \(CAFO\) Waste](#) (Sierra Club Guidance Oct 20, 2004)
-

GRACE Factory Farm Project's position on methane digesters (2003)

The GRACE viewpoint on methane digesters. The US government has started to hand out subsidies to farmers to install methane digesters--which extract methane from animal manure to create energy--as a way to deal with problems associated with factory farm waste. Digesters have greatly varying efficiencies, sometimes using all of the methane produced to sustain the production of more methane. The process is prohibitively expensive unless subsidized by taxpayer money and requires a constant supply of manure, but does not diminish the amount of manure present after methane has been extracted. Thus, methane digesters should not be viewed as a sustainable solution for factory farm waste, but rather a mechanism for perpetuating the production of excess manure...

The US Department of Agriculture (USDA) estimates animals in the US meat industry produced 1.4 billion tons of waste in 1997 -- 130 times the nation's volume of human waste and five tons of animal waste for every US citizen. The use of manure for fertilizer occurs naturally on traditional livestock farms and, assuming the manure is applied at the appropriate agronomic rates, this is good management. Production of more manure than the land on which the animals are housed can absorb is unsustainable, unless a large amount of additional land can be found for manure spreading.

The number of animals on factory farms often exceeds the ability of the factory farm operator to find enough cropland to responsibly spread the manure. This invariably leads to attempts to increase the quantity of manure spread on each plot of land by calculating the nutrient requirements using only the most generous assumptions -- or by spreading manure in excess of the legal requirements. When these practices are combined with the fact that virtually all manure spreading is calculated on nitrogen content only, even though many manures are enriched in phosphorus, the result is pollution of ground water from over application, run-off of nutrients into streams and lakes, and eutrophication of water ways.

Today's confined animal feeding operations (CAFOs) use various methods of waste disposal and storage: giant cesspools, known as lagoons; waste dispersion through injection of liquid manure into the soil; spraying the liquefied manure over the surrounding fields; or disposal of solid waste in landfills after liquid waste has evaporated from the lagoon. These practices create odor nuisances

and health hazards for the neighbors of the CAFO. Pollution from animal waste can cause respiratory problems, skin infections, nausea, depression and other serious illnesses for people who live near factory farms.

Given these potential problems and the community resistance to CAFOs they have spawned, mitigating the environmental impacts of this massive amount of manure has become a major concern for CAFOs, agribusiness and the USDA. Several companies claim to have invented systems that consume parts of the manure and create valuable byproducts such as methane gas and fertilizer. One of the more popular ideas is a very old concept: the methane digester. The methane given off during the decomposition of the manure is captured and burned, providing either heat or power for electrical generation. Proponents of digesters claim they remove offensive odors from manure, while producing low-cost energy.

While the act of covering the manure used by the digester to capture the methane will reduce odors, it has no effect on the odors from manure kept in additional lagoons or on the major source of CAFO odors—the exhaust fans from the CAFO barns (these fans account for about 60% of all odors emanating from a CAFO). Further, because methane burns at such a low temperature, the digester continually emits ammonia in excess of air pollution standards unless a separate ammonia stripper is employed.

Costs such as those associated with ammonia stripping when coupled with the short life-span of digesters (usually 10 years or less) are two of the reasons that even though methane digester technology has been available for many years, it has never been shown to be an economical way to generate power. Studies show that the installation and operating costs invariably exceed the savings the digester produces by replacing other energy sources. The cost/savings differential is better for large operations, but it can never overcome the requirement that methane power must be a secondary power system. Building regulations usually require that farm-operated systems like methane digesters have a back-up system which is normally the standard electrical grid connection that the farm would use if it was not generating methane. Further, because the gasses given off by manure in the barns are so lethal, no large CAFO can allow barn ventilation systems to fail for even limited periods. As a result, the installation costs for both the electrical system and the digester must be absorbed by the owner. For these reasons, no methane digester in the United States has been an acceptable investment unless it was partially supported by a government subsidy.

Even when supported by subsidies, digesters have a high initial cost and a long payback period. They also require the waste of at least 150-200 animals to maintain efficient operation. Digester operation is labor intensive and expensive, and in the end analysis, farmers have little economic need to produce their own energy. Energy expenditures amount to only about 3-5% of total operational costs on many farms. According to California Polytechnic University, subsidies are not the make-or-break factor in the use of biomass as long as the environmental advantages can be shown to be greater than the benefit of energy production. But are the environmental benefits of digesters real?

Digesters have greatly varying efficiencies. They are unreliable and inefficient when operated at ambient temperatures. Heating the manure improves the generation of methane, but even small amounts of manure heating will consume approximately 35% of the biogas produced by the digester temperature. Heating the manure enough to speed decomposition significantly takes far more energy. For example, Big Sky Farms proposed an operation using 6 digesters in Idaho, each

accommodating a 330,000-pound operating load of manure. In order to get the digesters to consume this amount of manure (from a 50,000 sow farrow-to-finish operation) as rapidly as it was produced, all the heat from the methane generated by the digesters was needed to heat the manure for digestion -- in other words, all the digester methane was used to create more digester methane. These digesters still required a huge supply of manure to be retained in the surrounding lagoons, and it did not reduce fossil fuel use at the CAFO.

Because of their excessive ammonia emissions, digesters are not likely to solve any greenhouse gas problems. A recent National Academy of Sciences report on air quality surrounding factory farms shows that ammonia released into the atmosphere, and the "nitrogen cascade" that follows this release, is the major concern for greenhouse gases. Air pollutants with a nitrogen base (NOx) released by a digester are similar to those from an internal combustion engine. Further, since the burning temperatures of methane are so low, the ammonia in the gases coming from the manure will not be oxidized and will be released from the digester stacks directly into the atmosphere. In the case of Big Sky, ammonia emissions from the digesters vastly exceeded those allowed at industrial sites in Idaho. Even if the ammonia was oxidized this would simply add other Nitrogen/oxygen compounds to the waste gases that have worse greenhouse effects than the ammonia.

Proponents of methane digesters originally touted these systems as an alternative source of energy. When it became obvious this was not the case, many proponents began to claim that the benefit of digestion was actually the reduction of odor from CAFO manure. However, while digesters mitigate some of the odor from manure, they do not make CAFOs good neighbors. In order to use a digester manure must be stored in anaerobic lagoons, which emit foul odors unless covered. Further, a study reported by the National Pork Board found that lagoon covers only reduce odor by about 45 percent. And finally, CAFO barns produce the majority of the odors at the site and this is unchanged when digesters are used.

After the methane has been produced there is still the issue of the waste that remains behind. The quantity of manure is not reduced by digestion. It still must be put somewhere, and all the chemicals and heavy metals that were in the manure prior to digestion remain after the digester has operated must be disposed of. As the National Academy of Sciences report emphasizes, the only reliable way to limit emissions to the atmosphere is to incorporate the manure into the land as rapidly as possible and to keep it covered and contained until that time. This is only possible if sufficient spreadable acreage is located adjacent to the CAFO. Obviously, to really solve the problems of odor and waste there is only one answer—never keep more animals than the available land will accommodate.

Anaerobic digesters do almost nothing to make a very serious problem less serious. Anaerobic digesters operate at temperatures too low to destroy pathogens. The concentration of oxygen-demanding carbon compounds exceeds concentrations in untreated municipal waters. Digestion converts organic forms of nitrogen to ammonia nitrogen, but it does not reduce phosphorus. And finally, the lagoons themselves continue to pose dangers to surrounding residents--leaking, emitting dangerous gases, and threatening to overflow.

Less Manure is the Solution

Manure accumulation is not the problem, it is a symptom of the real problem: CAFOs concentrate so much manure in such a small area that it cannot be realistically used for fertilizer. The GRACE Factory Farm Project does not endorse any manure treatment, recycling, or utilization technology. In our view, the solution is to allow unconfined animals to spread their own manure and to employ

sustainable farming practices, not to rely on the application of endless and increasingly expensive technological fixes.

Further reading

Test and Quality Assurance Plan: Swine Waste Electric Power and Heat Production Systems: Capstone MicroTurbine and Martin Machinery Internal Combustion Engine (Prepared by Greenhouse Gas Technology Center, in cooperation with EPA. November 2002. 166pp.)

Methane Leakage from Anaerobic Digesters

Excerpted from [Lifecycle Greenhouse Gas Analysis of an Anaerobic Codigestion Facility Processing Dairy Manure and Industrial Food Waste](#), Environmental Science & Technology, 2015, 49 (18), pp 11199–11208. DOI: 10.1021/acs.est.5b01331

Digester Operation. Digester emissions consist of direct emissions due to leaks or incomplete combustion as well as indirect emissions offset by electricity generated. Canadian and German studies reported fugitive emissions ranging from 2.1% to 3.1% of CH₄ utilized.[45,46] The nominal value of 3% of gas utilized was used. However, Liebetrau et al.[46] noted that when leaks and malfunctions were eliminated, near zero fugitive emissions were measured. Conversely, releases of biogas were observed through emergency vents due to overpressure conditions in the reactor or when flaring was not possible. Therefore, a sensitivity analysis was performed using the IPCC default uncertainty range of 0–10%.[18] This range also allows for consideration of emissions due to flaring of biogas, which were minimal during the period of study due to issues related to flare operation but were reported to be on average 21% of gas produced in a study of seven NYS AD plants.[47] Site supplied measurements of gen-set exhaust reported 1314 ppmv dry CH₄, which equated to 2.5% of the CH₄ utilized. This was consistent with reported values for incomplete combustion, which ranged from 0.4% to 3.28%.[45, 46] N₂O exhaust emissions were a smaller contribution at 0.03gN₂O/m³CH₄ utilized, which is also consistent with the range reported in the literature (0.02–1.75g N₂O/m³ CH₄ utilized).[46, 48]

References:

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ASERTTI monitoring protocol: Consolidated report and findings, PRO-DAIRY Program; Department of Biological and Environmental Engineering, Cornell University: Ithaca, NY, 2011;
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[48] Nielsen, O. K.; Lyck, E.; Mikkelsen, M. H.; Hoffmann, L.; Gyldenkærne, S.; Winther, M.; Nielsen, M.; Fauser, P.; Thomsen, M.; Plejdrup, M. S.; Illerup, J. B.; Sørensen, P. B.; Vesterdal, L. Denmark's national inventory report 2008 – Emission inventories 1990–2006; Submitted under the United Nations Framework Convention on Climate Change; NERI Technical Report no. 667; National Environmental Research Institute, University of Aarhus: Denmark, 2008;
<http://www.dmu.dk/Pub/FR667.pdf>.