Developing Solutions to Regulatory Challenges and Engaging Community Support to Expand Diversion of Food Waste to Anaerobic Digestion in the Northeast:

A REGULATORY GUIDE to the Northeast States' Air, Water, & Solid Waste Anaerobic Digestion Facility Permitting Processes

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INTRODUCTION

In the last decade, the number of Anaerobic Digestion (AD) facilities has been increasing in the northeast.[1] According to EPA's Excess Food Opportunities Map, there are at least 71 AD facilities in the Northeast region that accept food waste, including food and dairy processing waste.[2] Recent expansion in AD food waste processing capacity is in part due to efforts by state environmental agencies to support renewable energy development and promote increased diversion of food waste by large generators. Additional AD facilities can play an important role to fill gaps in the infrastructure that prevent additional large generators from diverting their food waste due to travel distances.

About Anaerobic Digestion

Anaerobic digestion is a process in which microorganisms naturally break down organic materials. Organic materials can be animal manure, food scraps, fats, oils, and greases, food processing waste, and others. AD refers to a built system for anaerobic digestion to occur in an enclosed reactor.[3] AD generates two primary products: biogas and digestate. If the materials processed in AD contain potentially harmful contaminants, the products will also contain those contaminants.

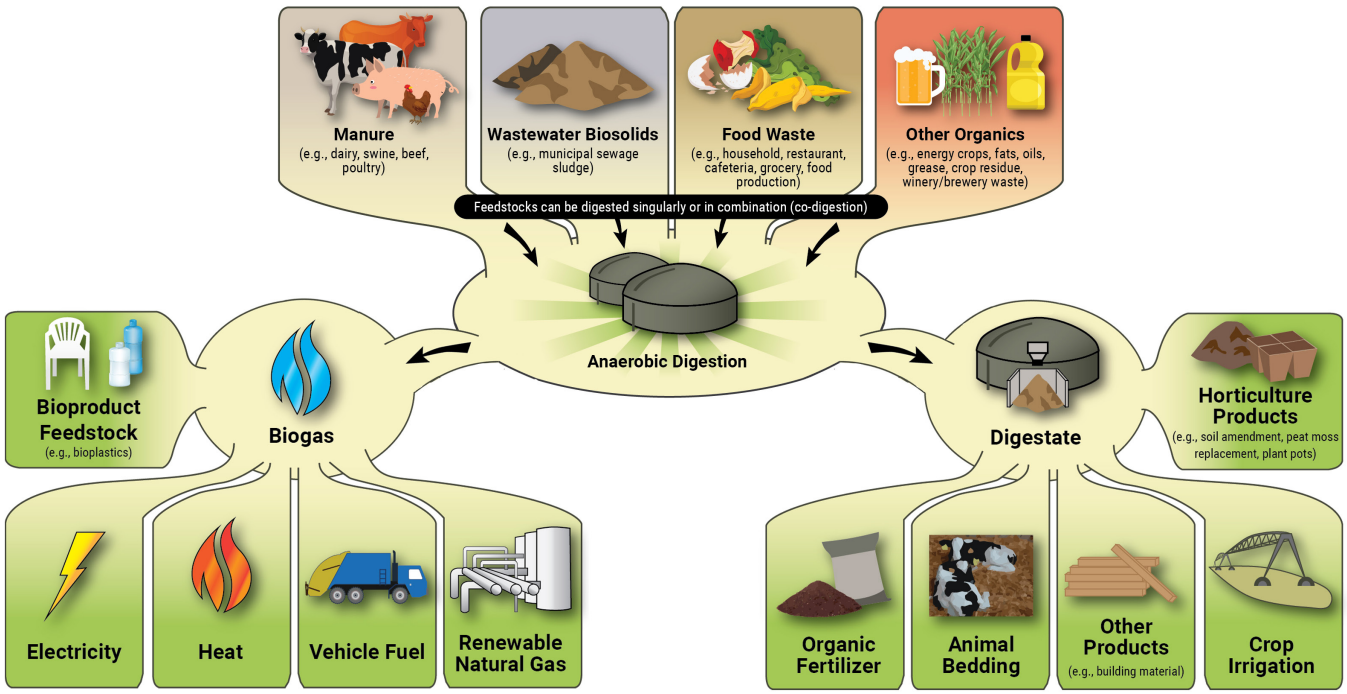
AD helps the generation of biogas through the reduction of carbon dioxide (CO_2) and other gases, concentrating and capturing methane gas. Methane is the primary gas in biogas along with other normally occurring gases (like CO_2 and Nitrogen). Biogas may also contain CO_2, trace amounts of water vapor and other gases, depending on the inputs.

Biogas is a renewable energy source that can be used to power engines, produce heat and/or electricity, fuel boilers and furnaces, and run alternative-fuel vehicles, among others.[4] The efficiency and use of biogas is highly dependent on the quality of biogas produced. Low quality biogas can be used in less efficient engines like internal combustion engines; however, a higher quality product can be used in more sensitive engines.

Another product from the AD process is digestate. Digestate is a mixture of liquid and solid materials, that is often referred to as wet material, and is rich in many nutrients. When inputs are free of harmful levels of contaminants like PFAS (per-and polyfluoroalkyl substances) and the AD process is designed well, digestate can be a good source for crop fertilizer for land application.

Environmental Benefits of Anaerobic Digestion

AD can provide many environmental benefits, including the reduction of landfilling or incinerating food scraps from residential properties and business, commercial food processing waste, fats, oils and greases, and yard waste. Keeping these materials out of landfills reduces the release of methane into the air. Methane is a potent greenhouse gas



1. Defined as Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont
2. https://geopub.epa.gov/ExcessFoodMap/
3. https://www.epa.gov/anaerobic-digestion/basic-information-about-anaerobic-digestion
4. https://www.epa.gov/anaerobic-digestion/basic-information-about-anaerobic-digestion

which, in the short term, can greatly contribute to climate change. When these materials are confined to landfills, there is also a loss of valuable nutrients from our ecosystem, and the digestate produced in AD can help to fertilize and promote nutrient-rich soil.[5]

Purpose of the Guide

To ensure proper functioning and to protect the environment and public health, state laws may require AD facilities to apply for air, water, waste, and possibly other permits and to comply with a complex set of varying requirements. Local authorities may also require AD facilities to comply with zoning and building requirements, among others. State regulations are evolving as states learn more about AD operations, what regulations are demonstrated to be effective, and as environmental justice (EJ) priorities are advanced.

Many state and local entities are enacting regulations, policies, and initiatives to advance EJ and are increasingly focusing on engaging with environmental justice communities they have identified based on racial, ethnic, and economic demographics. These communities have significant numbers of low-income people, Black, Indigenous, People of Color, and vulnerable populations, such as non-native English speakers, the elderly, children, and those with pre-existing medical conditions. Due to systemic racism and classism, environmental justice communities often experience disproportionate and adverse human health, environmental, climate-related, and other cumulative impacts resulting from waste management, transportation, and other industrial or commercial activities. AD facilities, like any waste handling, processing, and recycling operation, are often sited in these communities.

The Regulatory Guide serves the purpose to better understand and prevent potential duplicative local regulations as it relates to air, water, and waste regulations, as well as highlight critical opportunities for EJ engagement and action.

The Regulatory Guide's goals are to:

- Provide a baseline understanding of air, water, and waste regulations for AD developers looking to site and permit new construction, and
- Support the equitable expansion of AD in communities by reducing regulatory barriers while addressing EJ considerations and regulatory requirements.

Limitations:

The Regulatory Guide serves the purpose of helping AD Developers garner a baseline of required permits for the construction of new AD facilities that accept food waste. The State Factsheets provide a high-level overview of statewide regulations and permits that apply to AD. Additional permits may be required at the state and local municipality levels.

The Northeast Waste Management Officials' Association (NEWMOA) & the Northeast Recycling Council (NERC) have created additional materials including a Best Practices for Community Engagement Guide based on Federal and State EJ regulations and considerations to provide a resource for AD facility workers and managers to best engage with communities and residents of areas an AD facility is proposed to be located in.

NEWMOA & NERC have also developed a "What's AD & How Can I Get Involved?" Roadmap for community members to understand a high-level overview of AD, environmental justice considerations, and how they can get involved in the AD decision-making process. Scan the QR codes to learn more about the Regulatory Guide & "What's AD & How Can I Get Involved?" Roadmap.

The materials cover state regulations in the Northeast States of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.

Community Engagement Guide	*What's AD & How Can I Get Involved? (English)*	*What's AD & How Can I Get Involved? (Spanish)*

About the Organizations:

The Northeast Waste Management Officials' Association (NEWMOA)

NEWMOA is a non-profit, non-partisan, interstate association whose membership is composed of the state environment agency programs that address pollution prevention, toxics use reduction, sustainability, materials management, hazardous waste, solid waste, emergency response, waste site cleanup, underground storage tanks, and related environmental challenges in Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont.

5. https://www.epa.gov/anaerobic-digestion/environmental-benefits-anaerobic-digestion-ad#DivofOrgLF

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NEWMOA's Mission

NEWMOA provides a strategic forum for effectively solving environmental problems through collaborative regional initiatives that advance pollution prevention and sustainability, promote safer alternatives to toxic materials in products, identify and assess emerging contaminants, facilitate adaption to climate change, mitigate greenhouse gas sources, promote reuse and recycling of wastes and diversion of organics, support proper management of hazardous and solid wastes, and facilitate clean-up of contaminant releases to the environment.

The Northeast Recycling Council (NERC)

NERC is a multi-state 501(c)(3) non-profit organization whose programs emphasize source reduction, reuse, recycling, composting, environmentally preferable purchasing (EPP), and decreasing the toxicity of the solid waste stream in the 11-state region comprised of Connecticut, Delaware, Maine, Massachusetts, New Hampshire, New Jersey, New York, Maryland, Pennsylvania, Rhode Island, and Vermont.

NERC's Mission

NERC's mission is to minimize waste, conserve natural resources, and advance a sustainable economy through facilitated collaboration and action.

Clean+Healthy

Clean+Healthy is a nonprofit organization with a mission to build a just and healthy society where toxic chemicals are simply unthinkable. We work to enact and implement laws that protect human health and the environment, foster positive changes in the national marketplace, and empower people to engage on their own behalf. Based in Albany, NY, their work telescopes from community engagement to national impact.

Connecticut Coalition for Economic and Environmental Justice (CT CEEJ)

CT CEEJ works to eliminate or mitigate the environmental injustices borne by low income and communities of color and to provide a seat at the table where rules, laws, and policies regarding the environment are formulated and implemented.

The mission of Connecticut Coalition for Environmental Justice is to protect urban environments primarily in Connecticut through educating communities, through promoting changes in local, state, and national policy, and through promoting individual, corporate and governmental responsibility towards our environment.

Acknowledgments:

NEWMOA and the Team thank those who participated in the development of this guide as members of the Team, Steering Committee members, NERC-member states, and NEWMOA-member states.

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The Team members worked collaboratively and reached consensus on the content represented in the Guide. Specific views expressed in this document do not necessarily reflect those of the NEWMOA-member states, NERC-member states, Steering Committee members or the agencies or companies for whom they work, or United States EPA. Participation on the Project Team does not necessarily imply endorsement of the completed document or its usage. Mention of any company, process, or product names should not be considered an endorsement by any of the participants.

UNITED STATES FEDERAL

ANAEROBIC DIGESTER (AD) REGULATIONS

Anaerobic digesters must meet local, state, and federal regulatory and permitting requirements for air, solid waste, and water. AD permit requirements vary by location. Local, state, and federal resources can help you navigate the permit process.

Air Regulations

Federal air regulations applicable to AD facilities may require a New Source Review (NSR) preconstruction permit process for stationary sources of air pollution. NSR permits are mostly issued by state and local agencies, but some are issued by tribes or the federal government. The main pollutants regulated under the NSR permitting program are the criteria pollutants, which are pollutants for which EPA has established National Ambient Air Quality Standards (NAAQS). However, other pollutants such as greenhouse gases could also be regulated under NSR.

In general, after a source obtains a major NSR permit, the facility is also subject to the air regulations of the Title V program, which requires stationary air pollution sources to get operating permits that contain or consolidate all applicable requirements of the Clean Air Act (CAA) that apply to the source. These applicable requirements may come from the State Implementation Plans (SIP), from preconstruction permits issued to the source under the NSR program, or from New Source Performance Standards (NSPS) or National Emission Standards for Hazardous Air Pollutants (NESHAP) requirements, among others. The facility must apply for its title V permit within 12 months from the date operations start. Most Title V permits are issued by state, local, and tribal permitting authorities using regulations developed and approved by EPA as meeting the requirements of 40 CFR Part 70.

Given the complexity of the air permitting regulations, an owner/operator may wish to consult an expert on the NSR and/or Title V permitting process before applying for an air permit.

Note: If the digester is located in an area designated as nonattainment or maintenance for the National Ambient Air Quality Standards, where emergency flares are not feasible due to their potential for emissions of criteria air pollutants or their precursors, another option must be provided by the manufacturer which adequately addresses conditions to prevent biogas release into the atmosphere, as required or allowed by State and local regulations.

Solid Waste Regulations

Solid waste processing facilities are required to meet Resource Conservation and Recovery Act (RCRA) Subtitle D requirements covering the landfilling of non-hazardous solid wastes. Solid waste processing facilities are also required to meet 40 CFR Part 258, which covers the criteria to define nonhazardous solid waste. Depending on the state an AD facility is located, depending on the type and volume of feedstock that an AD facility processes, AD facilities may be exempt from solid waste permitting requirements.

RCRA provides an electronic database of questions and answers issued by EPA's Office of Resource Conservation and Recovery (ORCR), called RCRA Online. The RCRA Online resource allows users to browse topics and view documents identified in a search.

Land Application of Digestate: For land application of digestate made from AD feedstocks that include sewage sludge, please see Sewage Sludge Regulations promulgated under the Clean Water Act. Otherwise, under RCRA Subtitle D requirements, state environmental agencies will in general manage the beneficial use of industrial non-hazardous secondary materials (secondary materials).[6] Prior to beneficially using secondary materials in any projects, interested individuals or organizations should talk to the relevant state environmental agency to ensure proposed uses are consistent with state requirements. The Beneficial Use State Program Locator is a useful tool to identify individual state rules and programs related to beneficial use of secondary materials.

Water Regulations

Discharges from municipal and industrial wastewater treatment plants, sewer collection systems, and stormwater discharges

6. EPA defines industrial non-hazardous secondary materials (secondary materials) as any materials that are not the primary products from manufacturing and other industrial sectors. These materials can include scrap and residuals from production processes and products that have been recovered at the end of their useful life.

from facilities are regulated by the EPA under the Clean Water Act (CWA) National Pollutant Discharge Elimination System (NPDES) program.

While there are no national wastewater-related permit requirements solely triggered by using an AD facility, a discharge from an AD system to Waters of the U.S. or to a municipal (publicly owned) Wastewater Treatment Plant (POTW) requires an NPDES or pretreatment program discharge permit, respectively.

Depending on the particular system, EPA or State permitting authorities regulate water discharges from AD facilities.

Pretreatment:

The National Pretreatment Program is a component of the NPDES program.

EPA, States, and some municipalities enforce requirements to ensure that nondomestic facilities, including those that may use AD, that introduce pollutants into municipal wastewater treatment plants (publicly owned treatment plants or POTWs) adequately control their wastewater in order to prevent inhibition or disruption of the POTW treatment processes, protect local sanitary sewers' and POTWs' infrastructure, preventing discharge of pollutants into local waterways and protect public worker safety. States and municipalities develop management programs to ensure they implement the program on site-specific basis

Stormwater Pollution:

The NPDES regulations require stormwater discharges from certain industrial facilities, construction sites, and municipal separate storm sewer systems (MS4s) to obtain coverage under an EPA or state-issued NPDES permit, whichever applies. These permits will require that the site have measures in place to prevent or minimize pollutants being discharged into nearby waterways.

- Industrial activities
- Construction activities: If construction of an AD facility disturbs one or more acres of land, the operator must obtain coverage under an EPA or state-issued NPDES permit, whichever applies, for stormwater discharges from the site during active construction.
- MS4s: Discharges from AD facilities to an NPDES-permitted MS4 may be subject to additional stormwater requirements that are established in order to protect water quality. For any relevant requirements, contact the MS4 operator.

Water Supply:

An AD facility can generally recycle the recovered filtrate for any required dilution. However, there may be exceptions in places where adding groundwater may be necessary, in which case a well drilling permit and a water use permit will likely be required. For surface water withdrawal, the need for a permit needs to be explored on a site-by-site basis, and usually these permits are issued by the applicable state agency.

Sewage Sludge Regulations**:** If sewage sludge is included in the AD feedstock, any material (excluding wastewater) removed from an AD would be subject to the requirements of 40 CFR Part 503, *Standards for the Use or Disposal of Sewage Sludge* (or "Part 503"). The requirements in Part 503 apply to sewage sludge that is land applied as a soil amendment or fertilizer, incinerated in a sewage sludge incinerator, or disposed of in surface disposal site (also called a monofill). Part 503 is self-implementing meaning facilities must comply with the requirements regardless of whether the permitting authority has issued a sewage sludge or biosolids permit. States may have additional or more stringent requirements than Part 503 and those requirements must also be met.

Environmental Justice

The Executive Order 12898 - Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations - was issued by President William J. Clinton in 1994. Its purpose is to focus federal attention on the environmental and human health effects of federal actions on minority and low-income populations with the goal of achieving environmental protection for all communities.

In 1997, EJ Guidance under the National Environmental Policy Act was issued. This guidance includes six principles for environmental justice (EJ) analyses to determine any disproportionately high and adverse human health or environmental effects to low-income, minority, and tribal populations.

1. Consider the composition of the affected area to determine whether low-income, minority or tribal populations are present and whether there may be disproportionately high and adverse human health or environmental effects on these populations.
2. Consider relevant public health and industry data concerning the potential for multiple exposures or cumulative exposure to human health or environmental hazards in the affected population, as well as historical patterns of exposure to environmental hazards.
3. Recognize the interrelated cultural, social, occupational, historical, or economic factors that may amplify the natural and physical environmental effects of the proposed action.
4. Develop effective public participation strategies.

5. Assure meaningful community representation in the process, beginning at the earliest possible time.

6. Seek tribal representation in the process.

Further guides have been developed to provide assistance to EPA and other federal agencies on implementing EJ goals into the National Environmental Policy Act (NEPA) process, such as the Clean Air Act.

EJ Analysis tools include

- NEPAssist facilitates the environmental review process and project planning in relation to environmental considerations.
- Health Landscape allows users to create simple displays of health data concerning neighborhoods communities, states or any other area of interest.
- Health Professional Shortage Areas (HPSA) identifies by state and county where there are shortages of primary medical care, dental, or mental health providers.

AgSTAR Project Development Handbook: A Handbook for Developing Anaerobic Digestion/Biogas Systems on Farms in the United States outlines the importance of conducting community outreach and education where a new AD facility is being developed to achieve a successful project outcome. Early and often engagement will help obtain buy-in and approval from the community. This includes, but is not limited to, regulatory approval and the community and neighborhood where the project is located, as well as the surrounding region where the project may have an impact (e.g., truck traffic or odor impacts). Outreach methods can include public meetings, websites, newsletters, and social networks.

Emphasis should be placed on the benefits of AD, such as improved air quality, odor reduction, economic benefits, pollution prevention, and diversification of farm income.

It is important that the community understands the project design, especially in communities that require public participation during project zoning and siting cases.

Other Considerations

Land Use:

The first permitting consideration for an AD facility relates to its compatibility with community land use regulations. The local zoning authority determines whether or not a new AD facility meets existing land use criteria, and if not, a zoning variance may be granted. Use location criteria from NRCS Conservation Practice Standard (CPS) Waste Storage Facility (Code 313).

Local agencies may have jurisdiction over other parameters that are applicable to an AD facility or its location, such as maximum allowable levels for noise sources. Other site-specific permits may be required, for example, in the case of a site that is inhabited by endangered or protected wildlife or plants.

Beneficial Use:

EPA developed The Methodology for Evaluating Beneficial Uses of Industrial Non-Hazardous Secondary Materials. The methodology presents EPA's approach for evaluating a wide range of industrial non-hazardous secondary materials and their associated beneficial uses. It is intended to be useful to those conducting or reviewing beneficial use evaluations and other interested stakeholders, including states, local governments, tribal authorities, regulated communities, and the general public. Use of this methodology is voluntary, and the methodology does not change or substitute for any federal or state statutory or regulatory provisions or requirements.

For more information, please contact:
Ksenija Janjic, Janjic.Ksenija@epa.gov, for land application/ beneficial use of the digestate that is not produced from sewage sludge.

Jan Pickrel, Pickrel.Jan@epa.gov and Greg Shaner, Schaner.Greg@epa.gov for water regulations.

Tess Richman, Richman.Tess@epa.gov, for sewage sludge regulations.

Jessica Montanez, Montanez.Jessica@epa.gov, for air regulations.

Ryan Haerer, Haerer.Ryan@epa.gov, for underground storage tanks.

Onyemaechi Nweke, Nweke.Onyemaechi@epa.gov for Environmental Justice.

Sources:

AgSTAR Project Development Handbook: A Handbook for Developing Anaerobic Digestion/Biogas Systems on Farms in the United States (Chapters 9 & 10)

USDA Natural Resources Conservation Service, Conservation Practice Standard: Anaerobic Digester (Code 366)

EPA Regulatory and Guidance Information by Topic: Air

EPA Regulatory and Guidance Information by Topic: Waste

Regulatory and Guidance Information by Topic: Water

EPA Water Enforcement

EPA: Learn About Environmental Justice

CONNECTICUT

ANAEROBIC DIGESTION (AD) FACILITY REGULATIONS

Air Regulations

Most AD facilities located in Connecticut (CT) are required to obtain an air permit. The permit required is a New Source Review (NSR) permit and is issued prior to construction and operation of the AD. In accordance with RCSA Section 22a-174-3(a)(1)(D), a new emission unit with "potential emissions" (PTE) of 15 tons per year of any individual "air pollutant" as defined in RCSA Section 22a-174-1(5) is required to apply for and obtain a permit before starting construction. In the case of ADs, the typical individual air pollutant that triggers permit applicability is methane from the anaerobic digestor. Connecticut Department of Energy and Environmental Protection (CTDEEP) will issue a single permit for the entire facility (i.e. anaerobic digester, flare, engine (combined heat and power), renewable natural gas processing equipment, etc.). Other important components of the NSR permitting process include the Best Available Control Technology (BACT) review and air emissions modeling. Air permitting forms and instructions can be found at: Air Emissions Permits and General Permits (ct.gov).

For assistance and additional information about the air permits required for AD construction and operation, please contact a CTDEEP Air Permitting Engineer at DEEP.BAM.AirPermits@ct.gov or (860) 424-4152.

Solid Waste Regulations

AD facilities require a solid waste permit to construct and operate. However, on-farm anaerobic digesters may be exempt from permitting under Connecticut General Statute (CGS) Section 22a-208cc. On-farm facilities may qualify for exemption from Solid Waste Permitting if they are co-located with animal feeding operations, contain at least 50% of farm-generated feedstock and limit food waste to 40% of the feedstock total volume per Public Act No. 21-16 and such animal feeding operations maintains a comprehensive nutrient management plan, as developed by the Natural Resources Conservation Service of the United States Department of Agriculture. ADs which meet the exemption are required to report the amount of farm-generated organic waste that is processed by such anaerobic digestion facility and the amount of waste processed from such animal feeding operation and from other sources. Off-farm and on-farm facilities that do not meet this exemption, such as if the feedstock is greater than 40% food waste by volume, a CGS Section 22a-208 Solid Waste Permit is required to construct and operate. All permits will require, among other items, a Certification of Notice form, an Executive Summary, Applicant's Compliance Information, a Natural Diversity Database review, Applicant Background Information, Applicant's Business Information, a facility plan which include an Operations and Management Plan detailing with specificity the proposed operations, Engineering drawings, and an Environmental Justice Public Participation evaluation.

For assistance and additional information about the solid waste permits required for AD operation, please contact the Solid Waste Office at (860) 424-3366 or visit https://portal.ct.gov/DEEP/Permits-and-Licenses/Client-Concierge-Permit-Assistance.

Water Regulations

Stormwater and Wastewater permits may be required depending on the area of land disturbed during construction or the discharge process of water. CTDEEP's General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities is required for all projects disturbing 1 or more acres. Registration with CTDEEP is required for projects that disturb one or more acres that are exempt from local review and approval, including projects with CT siting council approval, and all projects that disturb more than five acres during construction. Projects that require local municipal review and approval and that disturb 5 acres or less must comply with municipal land use requirements for erosion and sedimentation control, the Connecticut Guideline for Soil Erosion and Sediment Control, as amended, and the Stormwater Quality Manual, as amended. ADs may require coverage under CTDEEP's General Permit for the Discharge of Stormwater Associated with Industrial Activity, (Industrial Stormwater GP ct.gov) if stormwater runoff from the operating facility is conveyed and discharged to a water body or wetlands.

For assistance and additional information about stormwater permitting, please contact the Stormwater Program at

DEEP.StormwaterStaff@ct.gov or visit Stormwater Management (ct.gov)

A wastewater discharge permit is required if an operation is generating and discharging process wastewater. If the wastewater is sent to a municipality, the two pretreatment permits that may apply are the General Permit for Discharges from Miscellaneous Industrial Users and the General Permit for the Discharge of Wastewater from Significant Industrial Users. If local municipal connections are not available an individual permit must be obtained to discharge wastewater to groundwater or surface water.

CAFO General Permit:

Qualifying large and medium CAFOs should have an active registration under the General Permit for Concentrated Animal Feeding Operations (CAFO GP) that can be updated to cover the discharge from the AD. If the large or medium CAFO is not registered under the CAFO general permit, they must submit a registration with their approved CNMP (inclusive of the AD operation) to CT DEEP. If the facility is not a large or medium CAFO they are not required to register for the CAFO general permit, however, their CNMP may need to be updated to incorporate the proposed AD.

For assistance and additional information about the CAFO GP for AD operation, please contact the Water Permitting and Enforcement Division at cafo.coordinator@ct.gov or visit https://portal.ct.gov/DEEP/Water-Regulating-and-Discharges/Agricultural-Wastewater/.

For assistance and additional information about the wastewater permits required for AD operation, please contact the Water Permitting and Enforcement Division at deep.waterpermittingenforcement@ct.gov or visit https://portal.ct.gov/DEEP/Water-Regulating-and-Discharges/Industrial-Wastewater/Industrial-Wastewater.

Environmental Justice

Connecticut's Environmental Justice Law, CGS section 22a-20a, sets forth a procedure for public participation in the permitting process for facilities that impact public health and the environment in state-identified environmental justice communities.

Connecticut's environmental justice statues defines "affecting facilities" as either a(n):

- Electric generating facility with a capacity of more than ten megawatts,
- Sludge or solid waste incinerator or combustor,
- Sewage treatment plant with a capacity of more than fifty million gallons per day,
- Intermediate processing center, volume reduction facility or multitown recycling facility with a combined monthly volume in excess of twenty-five tons,
- New or expanded landfill, including, but not limited to, a landfill that contains ash, construction and demolition debris or solid waste; (F) medical waste incinerator, or
- Major source of air pollution, as defined by the federal Clean Air Act.

Residents of EJ communities must have the opportunity to participate in decision of proposed facilities, or expansion of existing facilities that may affect the resident's environment or health. Opinions gathered in public participation may affect the regulating agency's decision. Applicants for a new or expanded permit, certificate or siting approval need to coordinate and facilitate the participation of those potentially affected during the regulatory process.

Applicants seeking to obtain certificates for new or expanded permits from CTDEEP or the Connecticut Siting Council involving an affecting facility that is proposed to be located in an environmental justice community or the proposed expansion of an affecting facility located in such a community, need to file a meaningful public participation plan with CTDEEP or the Council and must obtain CTDEEP's or the Council's approval of such plan prior to filing any application for such permit, certificate or approval. The applicant also needs to consult with the chief elected official or officials of the town or towns in which the affecting facility is to be located or expanded to evaluate the need for a community environmental benefit agreement.

For more information on CT's requirements for EJ, contact Edith Pestana, Environmental Justice Program Administrator, at Edith.Pestana@ct.gov

Other Considerations

CTDEEP provides Permit Assistance and Client Concierge services to help applicants with identifying the permits required for any project and navigate the permitting process. A pre-application meeting provides an opportunity to review permit requirements for a proposed project and address any questions. To begin, complete the pre-application questionnaire to ensure CTDEEP permit program specialists from all applicable departments are present at the meeting.

CTDEEP has many resources available on their website including an Environmental Permitting Factsheet that provides an overview of potential farm-based AD permitting requirements. It contains additional bureau information, and a table of permitted AD facilities with an interactive GIS mapping tool that identifies active facilities accepting food waste. This is a good place to start planning an AD project, whether related to farm operations or commercial facilities.

DELAWARE

ANAEROBIC DIGESTION (AD) FACILITY REGULATIONS

The Delaware (DE) Department of Natural Resources and Environmental Control (DNREC) has extensive requirements for permitting AD facilities that operate within the State. Below is a summary of DNREC's general regulations and permitting requirements. This factsheet outlines the State requirements for the permitting of an AD facility and the first step in the process is identify a location and receiving local zoning approval to site the facility. In addition, the regulatory information provided here may not represent all of the permits or regulations that an AD facility is subject to, which is why DNREC offers to the Regulatory Advisory Service, outlined in the 'Other Considerations' section of this document.

General Air Regulations

Delaware state law requires air quality permits for equipment which has the potential to discharge air contaminants into the atmosphere. State regulations (7 DE Admin. Code, 1102) establish permitting procedures and requirements.

General Solid Waste Regulations

Any anaerobic digester in the State that consolidates and aggregates material from multiple generation points is required to have a solid waste facility permit and more specifically a Resource Recovery Permit. The regulations outlining the requirements of a resource recovery facility can be found at this link: 1301 Regulations Governing Solid Waste (delaware.gov)

General Water Regulations

Delaware state law requires permits for the construction and operation of water pollution control facilities, as well as industrial stormwater and wastewater discharges. State water regulations seek to prevent, manage and/or control the pollution from activities that affect or have the reasonable potential to affect the quality of Waters of the State. Depending upon the specific nature of an AD facility project, at a minimum the following state water regulations in whole or in part may apply:

- 7 DE Admin. Code, 7201- Regulations Governing the Control of Water Pollution.
  - § 4.0 Pollution Control Facilities Construction and Operation.
  - § 6.0 – 8.0 National Pollutant Discharge Elimination System Program Requirements.
  - § 9.0 Industrial Stormwater and Construction Stormwater General Permit Requirements.
- 7 DE Admin. Code, 7101 – Regulations Governing the Design, Installation and Operation of On-Site Wastewater Treatment and Disposal Systems

Environmental Justice

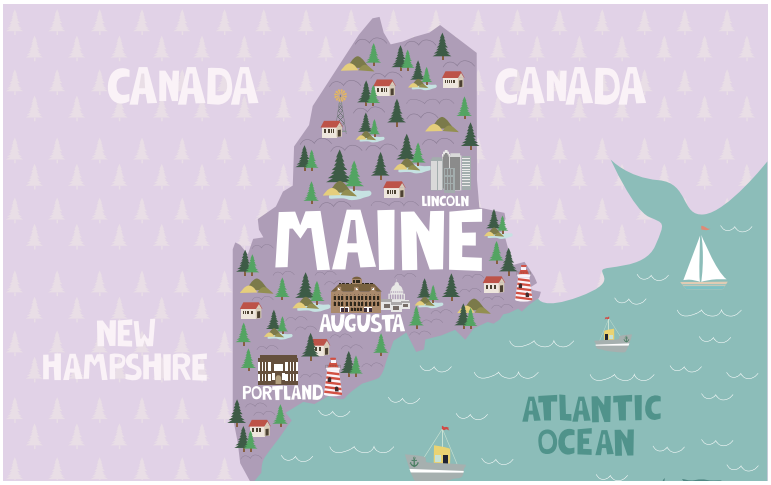
DNREC promotes environmental justice through the meaningful involvement and fair treatment of all people, regardless of race, color, national origin, or income in the implementation of DNREC's mission. DNREC strives to provide equitable access to green spaces, public recreation opportunities, and information and data on potential exposure to environmental hazards. Please visit de.gov/dnrecej to learn more about environmental justice at DNREC.

An entity seeking a permit for a qualified project within or adjacent to the boundaries of an underserved community shall contact the department for any additional requirements prior to submitting their application to DNREC. To integrate environmental justice into its decision-making, DNREC has developed a map-based tool that leverages data and information from DNREC programs and external partners to help identify communities disproportionately impacted by agency decisions and environmental issues. Please visit the DNREC EJ Data and Information page to determine if your project meets these criteria.

Other Considerations

The Department of Natural Resources and Environmental Control (DNREC) offers a free advisory service to help businesses learn about, and navigate, the regulations and permit requirements that apply to new or expanding businesses.

The Regulatory Advisory Service includes representatives from each division within DNREC. This group works together to help business leaders find the information they need, when they need it.



MAINE

ANAEROBIC DIGESTION (AD) FACILITY REGULATIONS

Air Regulations

All minor source AD facility air emissions are regulated under 06-096 C.M.R. Chapter 115: Major and Minor Source Air Emission License Regulations. A minor source of air emissions has the potential to emit less than 50 tons per year of volatile organic compounds (VOC) for facilities located within the Ozone Transport Region (OTR), 100 tons per year of VOC for facilities located outside the OTR, 10 tons per year of a single hazardous air pollutant (HAP), 25 tons per year of all hazardous air pollutants combined, and 100 tons per year of any other regulated pollutant (not including greenhouse gases). Major sources require an air emission license (a Title V permit) under 06-096 C.M.R. Chapter 140, Part 70 Air Emission License Regulations. A major source of air emissions has the potential to emit at or above any of the levels identified above. New equipment or modified equipment that will result in an increase in emissions at both minor and major sources are subject to Best Available Control Technology (BACT) requirements, determined on a case-by-case basis considering the energy, environmental, and economic impacts and other costs of possible emissions reduction strategies. In addition to being subject to applicable requirements found in Maine's Air Rules - including but not limited to visible emissions standards, particulate emission standards, ambient air quality standards, and emissions monitoring, generated air quality is regulated by 06-096 C.M.R Chapters 400 and 409. The general solid waste and processing facility provisions require odor control and no unreasonable adverse effects on air quality.

For assistance and additional information about air licensing requirements for AD construction and operation, please contact Jane Gilbert, Air Licensing Program Manager, at jane.gilbert@maine.gov or (207) 530-0554.

Solid Waste Regulations

All AD facilities are considered processing facilities and require at least one solid waste permit to construct and operate. The Residuals, Sludge and Composting program oversees AD facility licensing, compliance inspections, technical assistant, enforcement, and education & outreach. AD facilities must obtain proper licensing outlined in 06-096 C.M.R Chapters 400: General Licensing of Solid Waste Facilities and 409: Processing Facility regulations. Processing facility regulations emphasize proper leachate and wastewater control as well as timely reporting. All AD facilities are required to undergo an Environmental Monitoring Program outlined in 06-096 C.M.R Chapter 405: Solid Waste Management Rules - Water Quality, Monitoring, Leachate Monitoring and Water Characterization to determine if the facility could jeopardize public health or environmental safety.

For assistance and additional information about the solid waste permits required for AD operation, please visit the Maine Department of Environmental Protection (MEDEP) https://www.maine.gov/dep/waste/residuals/ or contact Residuals, Sludge and Composting staff, Mike Jakubowski at Michael.Jakubowski@maine.gov or (207) 512-0062.

Water Regulations

Stormwater and Wastewater permits may be required depending on the area of land disturbed during construction and implemented operation practices. Stormwater permitting is regulated by three main laws. The Site Location of Development applies to commercial and residential projects creating three or more acres of new impervious surface or businesses utilizing greater than 20 acres of land. The Stormwater Management Law requires facilities that disturb over one acre during construction and takes into consideration both the quantity and quality of runoff produced. The Water Discharge Law encompasses multiple permits that may apply to AD siting including the Multi-Sector General Permit, The Municipal Separate Storm Sewer Systems (MS4) General Permit, and the Maine Construction General Permit (MCGP). The MCGP regulates point source and indirect discharge of stormwater to surface waters from "construction activity" as defined by the Maine Pollutant Discharge Elimination System (MPDES) General Permit. Two additional permits may be required depending on facility location and classification. The Post Construction Discharge of Stormwater in the Long Creek Watershed is required for any facility discharging stormwater directly or indirectly to Long Creek and its tributaries, and the Multi-Sector General Permit for Stormwater Discharge Associated with Industrial Activity is required for industrial facilities to discharge stormwater to state surface waters.

AD facilities must meet siting requirements outlined by the AD Solid Waste 06-096 C.M.R Chapter 409 which include building outside of a 100-year flood plain, residing at least 100 feet from a protected natural resource and obtaining a 06-096 C.M.R. Chapter 335 480-A permit if on or adjacent to a significant natural resource including but not limited to coastal waters, freshwater wetlands and within 300 feet of an off-site water supply or spring. Solid Waste General Licensing 06-096 C.M.R Chapter 400 requires new solid waste facilities to demonstrate there will be "no unreasonable adverse effects on surface water quality" and that there is "no unreasonable risk that discharge to a significant ground water aquifer will occur."

For assistance and additional information about water permits required for AD operation, please contact Holliday Keen for industrial stormwater permitting assistance at holliday.keen@maine.gov or (207) 242-4649, and Gregg Wood for wastewater permitting assistance at gregg.wood@maine.gov or (207) 287-7693.

Environmental Justice

Maine's An Act To Require Consideration of Climate Impacts by the Public Utilities Commission and To Incorporate Equity Considerations in Decision Making by State Agencies designates the Governor's Office of Policy Innovation and the Future to define environmental justice", "environmental justice populations", "frontline communities" and other terms. It also directs Officials to develop considerations to incorporate equity considerations in decision-making at the Public Utilities Commission. AD is considered a public utilities facility.

Other Considerations

Certain permits require interaction with additional departments outside the scope of air, water and solid waste to maintain environmental protection. For example, any project located in, on, over or adjacent to a protected natural resource must be permitted pursuant to the Natural Resources Protection Act (38 MRSA §480-A–480-JJ); any project disturbing more than one acre must be permitted pursuant to the Stormwater Management Law (38 MRSA §420-D); and any project occupying 20 acres or more or creating 3 acres of more of structure or impervious area must be permitted pursuant to the Site Location of Development Act (38 MRSA §481-489-E).

MARYLAND

ANAEROBIC DIGESTION (AD) FACILITY REGULATIONS

AD Facility Regulations

Siting and operating anaerobic digestion facilities in Maryland may be subject to several Maryland Department of the Environment (MDE), Maryland Department of Agriculture (MDA), and Maryland Public Service Commission (PSC) permits and approvals. The primary source of information about the air, waste, and water regulations in this fact sheet was gleaned from Permitting Guidance for Maryland Anaerobic Digestion Facilities, July 2019.

Air Regulations

Certain equipment used by AD facilities may need air quality permits. A State Permit to Construct (PTC) as required under COMAR 26.11.02.09, is a pre-construction permit that must be obtained prior to the construction, installation, or modification of equipment or processes, including air pollution control equipment, which is considered a source of air pollution. Equipment or processes involved in anaerobic digestion that would require a PTC may include boilers/process heaters, screening systems, grinding/shredding machinery, drying equipment, flares, and stationary internal combustion engines.

Sources of air pollution with the potential to significantly affect air quality may also be required to apply for and obtain a State Permit to Operate (PTO) as specified under COMAR 26.11.02.13. A PTO includes operational limits, work practices, monitoring, testing, recordkeeping, and reporting conditions.

For assistance and additional information about the air permits required for AD operations, please contact Mr. Mario Cora, Chief of the Combustion and Metallurgical Division of the Air Quality Permits Program at mario.cora@maryland.gov or (410) 537-3858.

Solid Waste Regulations

MDE's Land and Materials Administration issues a refuse disposal permit that regulates the handling and disposal of solid waste. An anaerobic digestion facility could be required to have a refuse disposal permit, unless it is for private use and located at a school, apartment complex, industrial facility, hospital, commercial establishment, individual residence, farm, or similar locations COMAR 26.04.07.23(A)(2).

It would likely be regulated as a processing facility, unless:

- The digestate is returned to the marketplace in the form of a raw material or product;
- The quantity of non-digestible and non-recyclable solid waste handled at the facility remains at a de minimis (negligible) level; and
- The facility does not cause a nuisance, pollution, or other threats to public health, safety, or comfort as required under COMAR 26.04.07.03.

Note: At the time of this publication, MDE is developing recycling regulations that will address anaerobic digestion facilities under a separate regulatory system.

For assistance and additional information about the waste permits required for AD operations, please contact MDE's Solid Waste program at 410-537-3315.

Water Regulations

Industrial Stormwater Discharge Permit: MDE issues a General Permit for Storm Water Discharges from Storm Water Associated with Industrial Activity, a general stormwater permit issued via Maryland's delegated authority under the federal National Pollution Discharge Elimination System (NPDES) permit program. An anaerobic digestion facility will require coverage under this permit if it is located with another regulated activity or if this digester represents the primary activity at its location. Maryland identifies anaerobic digestion under Standard Industrial Classification (SIC) Code 2875.

For additional information about industrial stormwater permitting, you can contact Casey Leach, Industrial Stormwater Permits Division, at casey.leach@maryland.gov or 410-537-3323.

Wastewater Discharge Permits: For wastewaters associated with the process (such as effluent from the digester or pulping process), there are multiple options for discharge permits:

- A Pretreatment Permit to discharge to the local sanitary sewer system for eventual surface water discharge.
  - Most often, Maryland delegates pretreatment authority to local POTWs, municipalities, or counties

- Here is a list of local pretreatment contacts: https://mdewwp.page.link/PTContacts
- Here is a link to MDE's Pretreatment Webpage: https://mdewwp.page.link/Pretreatment
- For additional information, you should contact the local coordinator. If further assistance is needed or there is no local pretreatment program in your jurisdiction, contact MDE's Pretreatment Coordinator, Marjorie Mewbourn, at marjorie.mewbourn@maryland.gov or 410-537-3651.

- A direct discharge surface water permit.
  - This option may be difficult if the effluent contains elevated nitrogen or phosphorus because the Chesapeake Bay Total Maximum Daily Load requires full offset for those parameters.
  - Here is a link to MDE's Industrial Surface Water webpage: https://mdewwp.page.link/IGPD
  - For additional information, contact Jonathan Rice, Division Chief of the Industrial & General Permits Division, at jonathan.rice@maryland.gov or 410-537-3323

- A groundwater discharge permit.
  - Here is a link to MDE's Groundwater Discharge Permits webpage: https://mdewwp.page.link/GWDP
  - For additional information, you can contact Mary Dewa, Division Chief of the Groundwater Discharge Permits Division, at mary.dewa@maryland.gov or 410-537-3661.

Environmental Justice

Maryland defines Environmental Justice as equal protection from environmental and public health hazards for all people regardless of race, income, culture and social class. The Environment - Permit Applications - Environmental Justice Screening bill requires public notice permits (COMAR 1-601) to include an EJ score in the application to the Department. To calculate an EJ Score, the applicant must enter in the address of the proposed permitted facility in a Maryland EJ Screening Tool.

For assistance and additional information about the EJ requirements for AD operations, please contact Devon Dodson, Assistant Secretary and Environmental Justice Officer at devon.dodson1@maryland.gov or (410) 537-4499.

Other Considerations

The Maryland Department of Agriculture's State Chemist Section regulates the sale and distribution of soil conditioners, including digestate. Distributors of digestate are required to annually register each brand and grade of commercial fertilizers or each product name of soil conditioners under the Agricultural Article, Title 6, Subtitle 2, "Maryland Commercial Fertilizer Law".

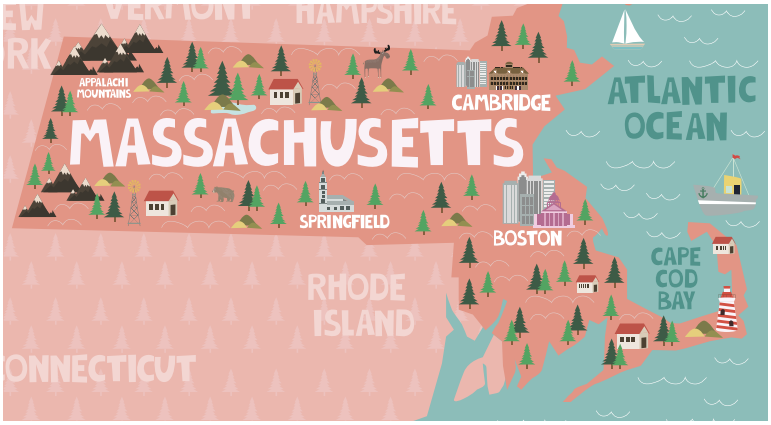
For assistance and additional information about digestate requirements for AD operations, please contact Philip Davidson, Product Registration Supervisor, at philip.davidson@maryland.gov or (410) 841-2721.

The Maryland Public Service Commission (PSC) requires approval for interconnection and renewable energy distribution. This includes anaerobic digestion facilities producing a Tier 1 renewable energy source and proposing to interconnect to an electric distribution system to export generated renewable energy. Section 7-701 of the Public Utilities Article includes both qualifying biomass and methane generated from the anaerobic decomposition of organic material at a landfill or wastewater treatment plant as Tier 1 renewable energy. Applicants should first contact their local electric distribution company to determine if an inter-connection, maintenance and operation agreement is required.

PSC also requires certification of an anaerobic digestion facility that produces electricity from a Tier 1 renewable source that would like to participate in Maryland's Renewable Portfolio Standard under COMAR 20.61.02.02.

For electric generating engines rated at greater than 2,000 kilowatts, the applicant must apply for and obtain a waiver from the requirement to obtain a Certificate of Public Convenience and Necessity (CPCN) from the PSC prior to submitting an air quality permit to construct application to the Department.

If a waiver is not granted, a CPCN is required from the PSC. For more information about the CPCN, go to https://www.psc.state.md.us/electricity/cpcn-information/.



MASSACHUSETTS

ANAEROBIC DIGESTION (AD) FACILITY REGULATIONS

AD Facility Regulations

In most cases a comprehensive plan application (CPA) for a process emissions unit (AQ02) will be needed but will be determined by the amount of emitted air contaminant. The plan application is required if you are proposing construction, substantial reconstruction, or alteration of a facility that has the potential to cause or contribute to a condition of air pollution. For specific information on when an application must be submitted for an Air Quality Plan Approval refer to the regulations in 310 CMR 7.02(4) and 7.02(5). See exemptions at 310 CMR 7.02(2). In addition, a Top Case Best Available Control Technology (BACT) analysis should be prepared and submitted to MassDEP for review. Other items that could be requested include a modeling analysis to demonstrate compliance with all applicable National Ambient Air Quality Standards (NAAQS) and a noise study.

For any air related project, it is required to have a preapplication meeting with the appropriate Massachusetts Department of Environmental Protection (MassDEP) regional Air Permit Chief. To schedule a preapplication meeting or for assistance and additional information on the AD permitting process, please contact your MassDEP Regional Air Permit Chief: Central Region Tom Hannah thomas.hannah@mass.gov; Northeast Region Ed Braczyk edward.braczyk@mass.gov; Southeast Region Tom Cushing thomas.cushing@mass.gov; Western Region Marc Simpson marc.simpson@mass.gov.

Solid Waste Regulations

All AD facilities require a either a General Permit for Recycling, Composting, or Aerobic and Anaerobic Digestion Operations (310 CMR 16.04) or a Permit for Recycling, Composting, and Conversion (RCC) Operations (310 CMR 16.05) and are regulated based on the tonnage of processed on- or off-site organic waste. Operations that intake less than 100 tons per day (over a 30-day rolling average) of organic material require a General Permit outlined by 310 Mass. Reg. Section 16.04. General permit requirements specify use of best management practices and required reporting. AD facilities process two Carbon: Nitrogen ratios of organic materials: above 50:1 and below 30:1. If a digester is accepting 15+ tons of 30:1 organic material per day, it must be delivered in a sealed container and inserted using direct connection to minimize odor. All organic material regardless of organic composition must be added to the system or stored in a sealed vessel to mitigate odor on day of arrival. On-farm AD operation size is limited to less than 100 tons per day to prevent the creation of industrial AD facilities. AD facilities that process more than 100 tons per day of organic material require a 310 Mass. Reg. Section 16.05 Recycling, Composting, and Conversion (RCC) Permit. AD operations located at Wastewater treatment facilities are regulated by the MassDEP Bureau of Water Resources and any AD operation that utilizes sludge as an input material and not co-located at a wastewater treatment facility is considered a solid waste facility and must obtain Solid Waste Site Assignment and a Solid Waste Facility Permit.

For assistance and additional information about the air permits required for AD operation, please contact your regional MassDEP Solid Waste Section Chief: Central Region Jim McQuade james.mcquade@mass.gov; Northeast Region: Mark Fairbrother mark.fairbrother@mass.gov; Southeast Region: Mark Dakers mark.dakers@state.ma.us; Western Region: Dan Hall daniel.hall@mass.gov.

Water Regulations

Stormwater and Wastewater permits may be required depending on the location and discharge process during construction and operation. The EPA administers Clean Water Act wastewater discharge and stormwater permits in the state of Massachusetts. Any facility that discharges to surface water must obtain a National Pollution Discharge Elimination System (NPDES) permit. Possible required permits include a Construction General Permit (CGR) and Dewatering & Remediation General Permit (DRGP). All construction that disrupts one or more acres of soil requires a CGR. If the total land disturbance for the project is less than one acre but there will be dewatering discharge to surface water, the DRGP is required. If the total land disturbance for the project exceeds one acre, and there will be a discharge to a surface water that has the potential to be contaminated, both the CGP and DRGP are required. In addition to NPDES permits, a 314 CMR Section 3 permit is required for discharges of pollutants from point sources to state surface waters. The MassDEP Wetlands and Waterways program oversees storm-water regulations under the Wetlands Protection Act, but local conservation commissions are the permitting entities. If siting near a jurisdiction, visit the local conservation commission to determine if a permit is required.

AD facilities must meet siting requirements of the AD Solid Waste permits. The solid waste General Permit requires a digester to be at least 250 feet from existing water supplies. The RCC permit requires a site description of water sources, such as public and private water supply wells, wetlands, streams, rivers or other water bodies, within a half mile of the operation. Both the General and RCC Solid Waste permits require AD operations to implement best management practices and properly control water pollutants. Additionally, M.G.L. c. 83 ss 6 and 7 should be examined for applicability of siting requirements.

For assistance and additional information about the water permits required for AD operation, please contact the respective MassDEP regional BWR representative or David Boyer at david.boyer@mass.gov.

Environmental Justice

An Act Creating a Next Generation Roadmap for Massachusetts Climate Policy was signed into law on March 26, 2021. The Act amended several environmental statutes, including the Massachusetts Environmental Policy Act (MEPA) at Chapter 30, specifically §§ 62, 62B, 62E, 62J, 62K and 62L, effective June 24, 2021.

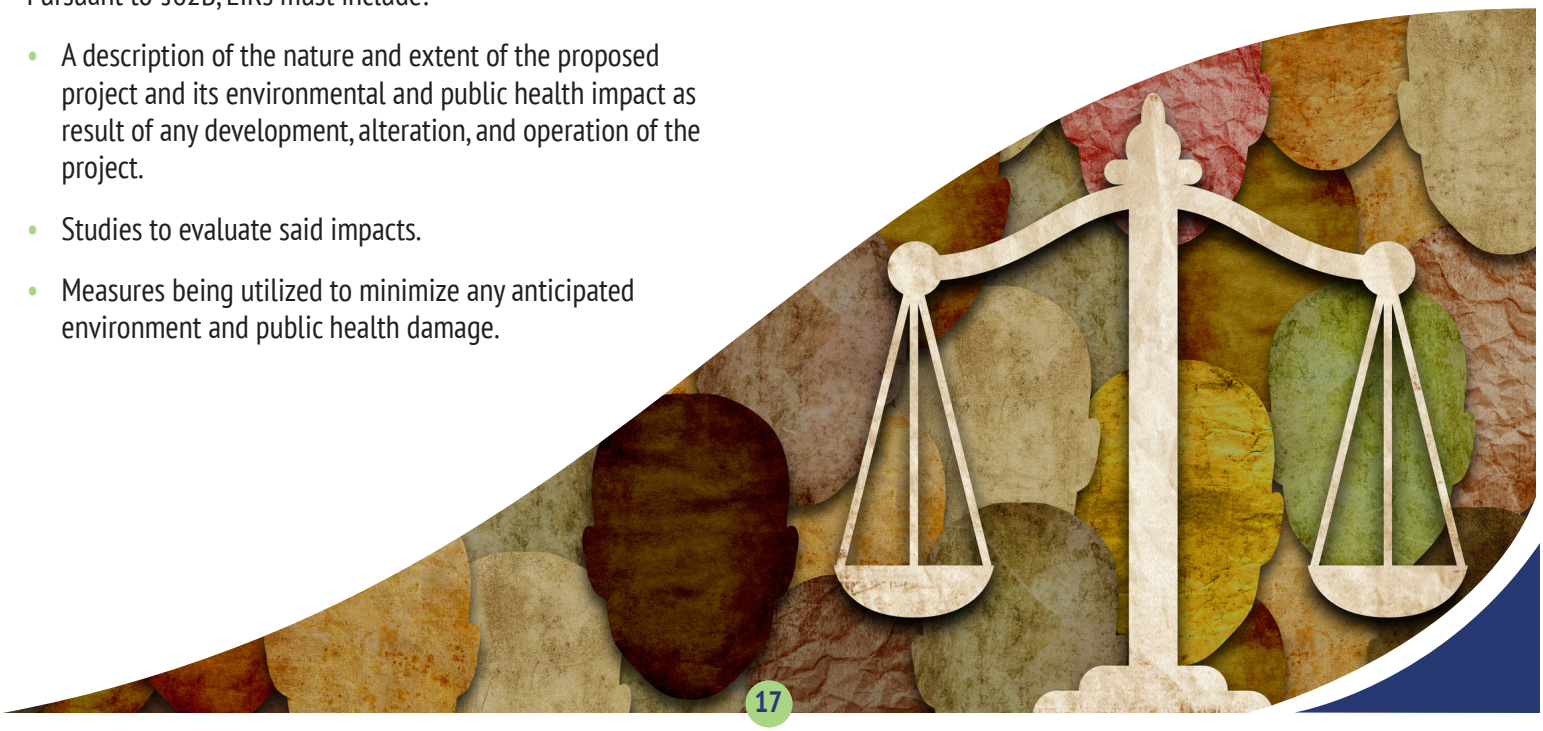
Among other provisions, at §62, MEPA was amended to codify definitions for environmental justice (EJ) principles and populations, as well as environmental benefits and burdens. At §62B, MEPA was amended to require an environmental impact report (EIR) for any project that is likely to cause damage to the environment and is located within 1 mile of an EJ population. If a proposed project impacts air quality, an EIR is required if the project is likely to cause damage to the environment and is located within 5 miles of an EJ population.

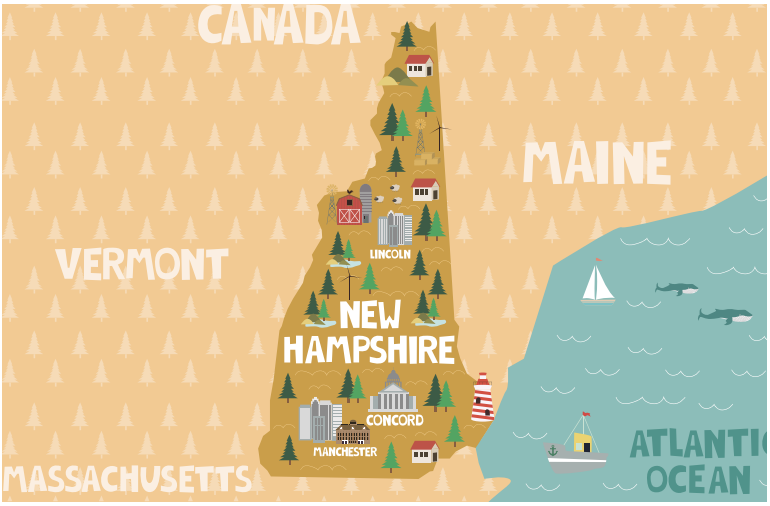
Pursuant to §62B, EIRs must include:

- A description of the nature and extent of the proposed project and its environmental and public health impact as result of any development, alteration, and operation of the project.
- Studies to evaluate said impacts.
- Measures being utilized to minimize any anticipated environment and public health damage.
- Any adverse short-term and long-term environmental and public health consequences that cannot be avoided should the project be undertaken.
- Reasonable alternatives to the proposed project and their environmental consequences.
- An assessment of any existing unfair or inequitable environmental burden and related public health consequences impacting the EJ population from any prior or current private, industrial, commercial, state, or municipal operation or project that has damaged the environment, including a detailed summary of the findings from the assessment.
  - If the assessment indicates an EJ population is subject to an existing unfair or inequitable environmental burden or related health consequence the report must identify:
    - The environmental and public health impact from the proposed project that would likely result in a disproportionate adverse effect on such population.
    - Potential impact or consequence from the proposed project that would increase or reduce the effects of climate change on the EJ population.

At §62J, MEPA was amended to require the proponent of a project that requires the filing of an environmental notification form ("ENF") to indicate on the document whether an EJ population that lacks English language proficiency within a designated geographical area is reasonably likely to be affected negatively by the project. The section further requires for the provision of additional measures to improve public participation. See the MEPA regulations at 310 CMR 11.00 for more details.

Please contact the appropriate environmental justice contact by agency for further information on the applicability of the law.





NEW HAMPSHIRE

ANAEROBIC DIGESTION (AD) FACILITY REGULATIONS

AD Facility Regulations

The New Hampshire Department of Environmental Services (NHDES) regulates air emissions from a variety of sources within New Hampshire through a statewide permitting program. The New Hampshire Code of Administrative Rules, Chapter Env-A 600 Statewide Permit System outlines the permitting process and lists sources that require permits for air emissions, either by overall source, specific device, or by pollutant. A Temporary Permit is issued prior to the commencement of construction or installation of any new or modified source or device. A state permit to operate is issued to sources that have completed construction, started operation, and demonstrated compliance with all applicable air regulations. As an alternate to a state permit to operate, sources may choose to obtain a general state permit for internal combustion engines that are used as emergency generators or fire pumps.

For assistance and additional information about the air permits required for an AD operation, please contact:

Barbara Dorfschmidt, Operating Permit Program Manager
barbara.d.dorfschmidt@des.nh.gov
603-271-6796

Padmaja Baru, New Construction and Planning Manager
padmaja.baru@des.nh.gov
603-271-6798

Solid Waste Regulations

An AD facility that accepts solid waste inputs is considered a solid waste processing and treatment facility. An AD facility that only manages solid waste inputs generated on-site (e.g., at a farm) is likely permit-exempt in accordance with Env-Sw 508.03 and subject to the general requirements in Env-Sw 508.02. An AD facility that accepts solid waste inputs generated off-site must obtain a solid waste facility permit (Env-Sw 300), and meet applicable siting, design, operating, and closure requirements (Env-Sw 500, Env-Sw 1000, and Env-Sw 1100). In most cases, an AD facility will need a standard permit, but some AD facilities may also qualify for Research & Development permits. If the liquid and solid residuals resulting from the digestion of solid wastes are to be used and distributed as products, they must be certified as waste-derived products in accordance with Env-Sw 1500.

For assistance and additional information about the solid waste permits required for AD facilities, please contact the Solid Waste Management Bureau, Engineering and Permitting Section at swmbpermitting@des.nh.gov or visit https://www.des.nh.gov/waste/solid-waste/permitting.

Wastewater and Stormwater Regulations

Wastewater and stormwater discharges are permitted by EPA with NH certifying that the permit meets state laws and regulations. Potential stormwater permits that could apply to the construction of an industrial facility include the Dewatering and Remediation General Permit (DRGP) and the Construction General Permit (CGP). A potential stormwater permit that could apply to the operation of an industrial facility is the Multisector General Permit (MSGP). Modifying or constructing a sewerage or wastewater treatment facility may require compliance with Env-Wq 700.

The discharge of wastewater from an industrial facility would be regulated based on where it is sent. A discharge to a surface water of the United States would need a National Pollution Discharge Elimination System (NPDES) permit. A discharge to ground or groundwater would be regulated by NHDES' Drinking Water Groundwater Bureau. A discharge to a Publicly Owned Treatment Works (POTW) would be regulated by the municipality, with certain NHDES wastewater regulations also applying.

For more information on the NHDES NPDES Program see:

NPDES Permits and Compliance Webpage:
https://www.des.nh.gov/waste/wastewater/npdes-permits-and-compliance

NPDES Factsheet: https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/2020-01/web-21.pdf

Groundwater Discharge: https://www.des.nh.gov/waste/wastewater/groundwater-discharge

Civil Rights, Nondiscrimination, and Environmental Justice

NHDES' Civil Rights and Nondiscrimination Implementation Plan With Environmental Justice Statement: https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/civil-rights-nondiscrimination-plan.pdf

NHDES Commissioner's Nondiscrimination Statement: NHDES is committed to ensuring equal participation in all projects, programs, and activities whether or not federal funding is involved. Title VI of the Civil Rights Act of 1964, as amended, requires that no person shall be discriminated against, denied the benefit of, or excluded from participation in any program due to race, color, or national origin. In addition, NHDES ensures equal participation regardless of age, sex, marital status, religion, gender identity or gender expression, income, disability, sexual orientation, citizenship status, status as a veteran, or any other legally protected status. Note: The complete Commissioner's Nondiscrimination Statement is located on page four of the NHDES' Civil Rights and Nondiscrimination Implementation Plan.

Environmental Justice Statement: NHDES recognizes the importance of Environmental Justice (EJ) and will work to incorporate EJ principles, including meaningful involvement and fair treatment of all New Hampshire residents, in the implementation of Agency programs and activities.

Background

The Environmental Protection Agency (US EPA) defines EJ as, "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations and policies." There is a body of evidence that suggests certain communities often bear a disproportionate impact from the implementation of environmental policies. These communities are more likely to experience:

- Greater exposure to environmental hazards, both outside and inside the home.
- Less access to green space, clean air, and clean water.
- Less access to opportunities for involvement in policy and permitting decisions.

NHDES recognizes that environmental health disparities exist within the state. These disparities have a lasting impact on the communities in which we live and serve. Therefore, NHDES is committed to advancing EJ in New Hampshire.

Note: The complete Commissioner's Statement on EJ is located on page five of the NHDES' Civil Rights and Nondiscrimination Implementation Plan and the Environmental Justice Plan is included on page six.

Other General Facility Siting Considerations

Alteration of Terrain (AoT) permits are required if a project proposes to disturb more than 100,000 square feet of contiguous terrain (50,000 square feet, if any portion of the project is within a protected shoreland). Disturbances greater than 2,500 square feet, over terrain with grades of greater than 25%, may also require these permits. AoT "General Permits by Rule" apply to smaller sites, which do not require applications or notifications.

Activities located in wetlands and surface waters, such as excavation, removal, filling, dredging and/or construction of structures in or on any bank, flat, marsh, forested wetland or adjacent to waterbodies, generally requires review and approval from the Wetlands Bureau in accordance with the Fill and Dredge in Wetlands Act (RSA 482-A), unless otherwise specified by rule or law.

The Shoreland Water Quality Protection Act (RSA 483-B) regulates waterfront development on land. The Act establishes minimum standards for the subdivision, use and development of shorelands adjacent to the state's public waterbodies.

General Permit Questions and Requests for a Pre-application Meeting

NHDES Permit Guidance: https://onlineforms.nh.gov/Home/a6d08726-405c-40b8-8a59-fef1bbf0336c

General Permit-related Inquiries should be sent to: permit-coordination@des.nh.gov

To Request a Pre-Application Meeting: https://onlineforms.nh.gov/Home/05780818-036f-43fb-add9-c00c0703191e

NEW JERSEY

ANAEROBIC DIGESTION (AD) FACILITY REGULATIONS

Air Regulations

All AD facilities must go through the Air Permit Applicability Determination process to determine the required permits for equipment installation and operation. First, an applicant must review the air pollution control (APC) permit applicability rule N.J.A.C. 7:27-8.2(c). A facility will either require a minor source permit or a major source operating permit or Title Five permit, as required under N.J.A.C. 7:27-22. A minor source must meet the requirements of N.J.A.C 7:27-8.3, the Minor Facilities General Provisions, and the list of required information for an air permit application delineated under N.J.A.C. 7:27-8.4. If the emissions levels exceed those permitted by a minor source, a major facility or Title Five permit must be submitted in accordance with N.J.A.C. 7:27-22. If N.J.A.C. 7:27-8.2(c) does not address answer all applicant permit questions, an Air Permit Applicability Determination Form should be completed and submitted to the Bureau of Stationary Sources at pcpnotices@dep.nj.gov for assistance.

For assistance and additional information about the air permits required for AD operation, please contact the New Jersey Department of Environmental Protection (NJDEP) Bureau of Stationary Sources General Permit Help Desk at (609) 633-2829 or aqppls@dep.nj.gov.

Recycling & Solid Waste Regulations

Most AD facilities require a Class C Recycling Center General Approval (GA) or a Research, Development and Demonstration (RD&D) Certificate of Authority to Operate (CAO) for construction and operation. The Recycling Regulations at N.J.A.C. 7:26A-1 et seq. are applicable to recycling centers GAs and the Solid Waste Regulations at N.J.A.C. 7:26-1.7(f) are applicable to RD&D CAOs. AD facilities are considered a Class C Recycling Facility that accept source-separated organics and require a Class C Recycling GA or a Class C RD&D CAO. Class C recyclable materials are defined in the Recycling Regulations at N.J.A.C. 7:26A-1.3. RD&D CAOs are for facilities which have a new or innovative technology or a new or innovative operational process modification made to an existing solid waste facility or operation and has a design capacity of less than 100 tons per day of any waste or material, unless otherwise approved by the Department. To be eligible for a GA or CAO, an application for plan inclusion to the District Solid Waste Management Plan (County Plan) must be completed for all recycling centers and RD&D facilities. Applications for County Plan inclusion are sent to the Solid Waste Management Official and/or Recycling Coordinator for the County in which the AD facility will be sited. Additionally, prior to applying for a GA or CAO, and concurrent with or subsequent to filing for County Plan inclusion, a newspaper notice must be published as described at N.J.A.C. 7:26A-3.1(d) & (e). A pre-application meeting with the Office of Permitting and Project Navigation (OPPN) is highly encouraged to coordinate with all applicable programs as listed in this document. A facility does not require a GA if it meets an exemption outlined by N.J.A.C. 7:26A-1.4(a). Importantly, N.J.A.C. 7:26A-1.4(b) outlines that facilities exempt from state-level permitting must comply with local zoning ordinances, while state-permitted facilities are exempt. All construction must conform with the New Jersey Uniform Construction Code. The facilities must be fully enclosed with an air management system that regulates odors and noxious compounds. All materials accepted by the recycling center must be removed from containers prior to processing unless they are in paper or biodegradable plastic bags which can be processed by the facility or use a depacker. Every operation must submit an annual recycling tonnage report by March 1.

For assistance and additional information about the Class C GA or RD&D CAO required for AD operation, please contact Dana Lawson, Chief, Bureau of Recycling & Hazardous Waste Management, at (609) 984-3438 or recyclingfacilities@dep.nj.gov.

Water Regulations

New Jersey Pollutant Discharge Elimination System (NJPDES) industrial stormwater permits may apply for both construction and operation of AD facilities. A General Permit for construction is required for all projects disturbing 1 or more acres (5G3 permit.) If processing, storage, etc. is conducted indoors or otherwise not exposed to stormwater, AD facilities may qualify for a Basic Industrial Stormwater General Permit which obligates facilities to implement best management practices and minimize exposure of source material to stormwater. If a facility does not qualify for a general permit due to stormwater exposure levels, it will require an individual permit through the NJPDES, N.J.A.C. 7:14A which issues permits based on best management practices to reduce exposure of stormwater to pollutants and monitoring of the discharge for confirmation that the BMPs are successful. These projects will require a Stormwater Pollution Prevention Plan that

demonstrates how drainage control will be used to minimize pollution of stormwater. Additional permits may be required depending on the pollutants present onsite.

For assistance and additional information about the water permits required for AD operation, please contact Gabriel Mahon, Chief, Bureau of NJPDES Stormwater Permitting and Water Quality Management at (609) 633-7021 or dwq_bnpc@dep.nj.gov. For assistance and additional information about discharge to groundwater and/or surface water NJPDES permitting, please contact Susan Rosenwinkel, Assistant Director, Division of Water Quality, Water Pollution Management Element at (609) 984-4441 or Susan.Rosenwinkel@dep.nj.gov.

Environmental Justice

New Jersey (NJ) approved An Act concerning the disproportionate environmental and public health impacts of pollution on overburdened communities, and supplementing Title 13 of the Revised Statutes on September 18, 2020 and went into effect immediately. You can review the Law in detail at https://dep.nj.gov/wp-content/uploads/ej/docs/ej-law.pdf. The Law designates and defines environmental justice, overburdened communities and the environmental and public health stressors and impacts from various sources of pollution, including industrial, commercial, and governmental facilities, among others. The Law designated NJDEP to create rules and regulations for new facility applicants and expansions of existing facilities. You can review the rules in detail at https://dep.nj.gov/wp-content/uploads/rules/rules/njac7_1c.pdf. The rules were adopted on March 9, 2023.

The recently adopted rules apply to applicants that submit a permit application to NJDEP for:

- A new or expanded facility,
- The renewal of an existing major source permit,
- Facilities located or proposed to be located, in whole or in part, in an overburdened community (OBC), or
- A Solid Waste Management Plan actions provided at N.J.A.C. 7:1C-4.4.

All permit applicants need to prepare and submit an environmental justice impact statement (EJIS) to NJDEP. The EJIS must include:

1. An executive summary of the information contained in the EJIS, including any supplemental information as required at N.J.A.C. 7:1C-3.3.
2. A detailed written description of the municipal and neighborhood setting of the facility, including the location of community and residential dwellings, hospitals, nursing homes, playgrounds, parks, schools, and comprehensive demographic, economic zoning, and physical descriptions. The site location shall also be identified by a site plan of the facility or equivalent map if no site plan exists.
3. A description of the facility's current and proposed operations, which shall include, but not be limited to, the following:
    i. An explanation of the purpose of the permit application, including how the project serves the needs of the individuals in the overburdened community;
    ii. Identification of all processes to be used, including pollution or environmental control measures and monitoring instrumentation, hours of operation, onsite equipment, traffic routes, number of employees, and all other information relevant to the potential for the facility to contribute to environmental and public health stressors in the overburdened community; and
    iii. For new or expanded facilities, a schedule for the construction and operation including anticipated completion dates for major phases of construction, any pollution or environmental control measures and monitoring instrumentation, hours of operation, onsite equipment, traffic routes, number of employees, and all other information relevant to the potential for the construction to contribute to environmental and public health stressors in the overburdened community.
4. A list of all the Federal, State, and local permits that are required, or will be required, for construction or operation of the facility including, but not limited to, those defined at N.J.A.C. 7:1C-1.5.

5. Evidence of satisfaction of any local environmental justice or cumulative impact analysis ordinances with which the applicant is required to comply.

6. The initial screening information obtained pursuant to N.J.A.C. 7:1C-2.3.

7. An assessment of the impacts, both positive and negative, of the facility on each environmental and public health stressor in the overburdened community identified as affected at the chapter Appendix under conditions of maximum usage or output, and a correlation of such impacts with various stages of the site preparation, facility construction and operation, including the amounts, concentrations, and pathways of any contaminants or pollution that will be associated with the facility.

8. A public participation plan that, at a minimum, satisfies the requirements at N.J.A.C. 7:1C-3.4(d) and 7:1C-4, including all proposed forms and methods of notice to the members of the overburdened community and the proposed hearing location.

9. A demonstration, including any necessary operational conditions and control measures, that the facility will avoid a disproportionate impact that would occur by creating adverse cumulative stressors in the overburdened community as a result of the facility's contribution. If the applicant cannot make such a demonstration, then it is presumed that a disproportionate impact is present and the applicant shall include the information required at N.J.A.C. 7:1C-3.3. 10. As applicable, how a proposed new facility will serve a compelling public interest in the overburdened community, in accordance with N.J.A.C. 7:1C-5.3.

Requirements specific to permit applicant for new facilities

When preparing an EJIS for a new facility, the applicant is required to conduct the analysis and provide the following information:

- An analyzation of the adverse cumulative stressors of the OBC that the facility that is proposed to be located, in whole or in part, in an OBC and a proposal for all control measures necessary to avoid facility contributions to all adverse environmental and public health stressors in the OBC.
  - **Note:** If the applicant demonstrates adequate prevention of adverse environmental and public health stressors in the OBC through it's proposal, DEP may grant the application. If the applicant does not adequately demonstrate in its proposal that it will prevent adverse environmental and public health stressors in the OBC, DEP shall deny the application.
- An applicant that seeks approval for a proposed new facility that will serve a compelling public interest in the overburdened community where it is to be located must demonstrate that:
  - The proposed new facility will primarily serve an essential environmental, health, or safety needs of the individuals in an OBC,
  - The proposed new facility is necessary to serve the essential environmental, health, or safety needs of the individuals in an OBC, and
  - There are no reasonable alternatives that can be sited outside the OBC to serve the essential environmental, health, or safety needs of the individuals in an OBC.
- Facilities that directly reduce adverse environmental and public health stressors in the OBC may be considered as serving an essential environmental, health, or safety need of the individuals in an OBC.

NJ's EJ rules and regulations are extensive and the information provided above is a high-level overview. AD developers may be subject to additional requirements. Contact David Pepe at david.pepe@dep.nj.gov or call 609-292-3600 for more information.

Other Considerations

Supplemental environmental permits may be required depending on the location of development. For facilities developing near the Pinelands Area, the Pinelands Protection Act, N.J.S.A. 13:18A, requires that development and management of facilities are approved by the Pinelands Commission. Additionally, the NJ Business Action Center can help navigate a variety of NJDEP water protection regulations that may require additional permits including the Freshwater Wetlands Protection Act, Flood Hazard Area Control Act, Wetlands Act of 1970, Coastal Area Facility Review Act, Waterfront Development Law, Tidelands Act, NJ Water Pollution Control Act, and the Highlands Water Protection and Planning Act. Consistency with the Water Quality Management Plan (WQMP) is also necessary. If sewage generating structures are proposed fully or even partially outside of the sewer service area, a WQMP amendment may be necessary to have sewer service area extended to the site.

NEW YORK

ANAEROBIC DIGESTION (AD) FACILITY REGULATIONS

Air Regulations

New York State (NYS) requires a permit or registration application for Anaerobic Digestion facilities depending on the level of emissions the facility will produce. Stationary emission sources considered a "process emission source," as defined by 6 CRR-NY 212-1.2, must submit an application addressing the requirements of 6 CRR-NY Parts 201 and 212. Anaerobic Digesters meet this definition. Part 201 incorporates both the Clean Air Act Operating Permit and long-established New York State permitting program. All AD facilities are required to obtain an air permit or registration for gas engine and safety flare use before AD construction can commence. Permit or registration applicability is determined by site-specific emissions assessments for pollutants, including hydrogen sulfide (H2S) which has a 1-hour State Quality Air Standard of 14 micrograms per cubic meter of air ($\mu g/m^3$) [Chemical Abstracts Service (CAS) 07783-06-4].

AD Facilities have additional air quality considerations under 6 CRR-NY Subpart 361-3.3. Odors generated by registered facilities must minimally impact sensitive receptors. If unreasonable, the DEC may implement actions to reduce odor issues. Permitted facilities must provide a description of air emissions collection and control equipment at the time of application. The facility must manage odors and remain in compliance with the permit.

There may be local air pollution regulations that must be considered. For assistance and additional information about the air permits required for AD operation, please visit https://www.dec.ny.gov/permits/6069.html or contact the NYS Department of Environmental Conservation (DEC) Division of Environmental Permits at (518) 402-9167 or deppermitting@dec.ny.gov.

Solid Waste Regulations

The Anaerobic Digestion Regulations, 6 CRR-NY Part 361-3.3 was signed on September 20, 2017 and went into effect November 4, 2017. Anaerobic Digesters are classified in one of three manners: exempt, registered or permitted. Designations are determined by location, quantity processed, and types of materials accepted.

1. **Exempt** facilities are exempt from Subpart 361-3.3 when "operated in a manner that does not produce vectors, dust or odors that unreasonably impact neighbors of the facility, as determined by the department" and "digestate must be stored and used in a manner that is protective of the environment."

2. **Registered** facilities are registered under Section 360.15 and must comply with operating requirements outlines in Section 360.19 and Subpart 361-3.3 subdivision (c).

3. **Permitted** facilities must fulfill the Subpart 361-3.3 requirements and meet permit qualifications outlined in Section 360.16.

Regional and on-farm facilities must meet distinct off-site waste acceptance requirements. Facilities that import less than or equal to 1,000 pounds or 1 cubic yard per week of source separated organics on a monthly average (whichever is greater with no more than 2,000 pounds accepted in any given week) are exempt. AD facilities located on farms without a Comprehensive Nutrient Management Plan (CNMP) are regulated based on the total tons of off-site material accepted daily. Farms accepting less than 50 tons per day require registration and farms accepting more than 50 tons per day require permitting. AD facilities located on a farm with a CNMP, such as concentrated animal feeding operations (CAFO), are classified by the percentage of non-manure waste accepted. If less than or equal to 50% of the total waste accepted is non-manure then it's exempt, but if off-site food waste and other non-manure sources make up more than 50% of the total waste accepted, it requires registration. AD facilities located on CAFOs must comply with additional National Resource Conservation Service (NRCS) Conservation Practice Standards.

Permitted AD facilities must have a collection program in place for organic waste that only accepts digestible materials, and non-processable waste accepted must be disposed of at least weekly. Additionally, digestate must comply with maximum pollutant levels outline in section 361-3.9. Any AD facility engaging in land application and storage of organic waste material is regulated under section 361-2. Registration is required for certain exempt and registered AD facilities that land apply the digestate, depending on the materials entering

the AD and where the digestate is land applied. Permitted AD facilities must submit a digestate management/use plan as part of the permit application.

For assistance and additional information about the solid waste permits required for AD operation, please visit https://www.dec.ny.gov/chemical/97612.html or contact the NYS DEC Bureau of Waste Reduction & Recycling at (518) 402-8706 or organicrecycling@dec.ny.gov.

Water Regulations

Two stormwater permits may apply to a project in addition to specialized AD considerations. Any project that disturbs greater than 1 acre of soil during construction requires a SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-20-001). If located in New York City east of the Hudson watershed, then a permit is required if more than 5,000 square feet of soil is disturbed. The location of an AD facility may fall under the SPDES Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity and require a permit or No Exposure Certification form.

AD facilities have additional water considerations under 6 CRR-NY Subpart 361-3.3. All AD facilities must be at least 200 feet from the nearest surface water, water well and state-regulated wetland unless otherwise approved by the department. Construction of registered and permitted facilities must minimize ponding and run-off must be controlled and stormwater must be diverted from the operating area. Permitted facilities require that all leachate collection, storage, and disposal be approved by the department. All waste, leachate, and liquid digestate storage must be in tanks that prevent contamination of the groundwater and surface water. All storage must adhere to subpart 361-2 or the NRCS NY313 referenced in section 360.3.

AD facility wastewater and stormwater that comes in contact with waste such as manure, bedding or other organic materials may require a discharge permit. The SPDES State Pollutant Discharge Elimination System permit is required if releasing discharged wastewater into surface or ground waters from a "point source," or a CAFO. The permit requires the development of a CNMP that is conforms to the Natural Resource Conservation Service's Conservation Practice Standard No. NY312.

For assistance and additional information about the water regulation permits required for AD operation, please visit https://www.dec.ny.gov/permits/96312.html or contact the NYS DEC Division of Environmental Permits at (518) 402-9167 or deppermitting@dec.ny.gov.

Environmental Justice

Environmental justice (EJ) is governed by the Cumulative Impacts Bill, which is an act amending the environmental conservation law, in relation to the location of environmental facilities. All agencies or applicants must prepare by contract or through an environmental impact statement (EIS), on any proposed or approved actions that may have significant effects on the environment.

Actions that are likely to require an EIS include actions which may directly or indirectly cause or increase a disproportionate or inequitable, or both disproportionate and inequitable pollution burden on a disadvantaged community. Criteria for determining whether a proposed action may have a significant effect on the environment, accounting for social and economic factors will include consideration of the extent to which a proposed action may reasonably be expected to cause or increase a disproportionate or inequitable or both disproportionate and inequitable burden on disadvantaged communities.

Permits will not be approved or renewed by the department if it may cause or contribute to, a direct or indirect, disproportionate or inequitable or both disproportionate and inequitable pollution burden on a disadvantaged community.

The statement must include:

- A description of the proposed action and its environmental 28 setting;
- The environmental impact of the proposed action including short- 2 term and long-term effects;
- Any adverse environmental effects which cannot be avoided should the proposal be implemented;
- Alternatives to the proposed action;
- Any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented;
- Mitigation measures proposed to minimize the environmental impact;
- The growth-inducing aspects of the proposed action, where applicable and significant;
- Effects of the proposed action on the use and conservation of energy resources, where applicable and significant, provided that in the case of an electric generating facility, the statement shall include a demonstration that the facility will satisfy electric generating capacity needs or other electric systems needs in a manner reasonably consistent with the most recent state energy plan;

- Effects of proposed action on solid waste management where applicable and significant;
- effects of any proposed action on, and its consistency with, the comprehensive management plan of the special groundwater protection area program, as implemented by the commissioner pursuant to article fifty-five of this chapter;
- Such other information consistent with the purposes of this article as may be prescribed in guidelines issued by the commissioner pursuant to section 8-0113 of this chapter; and
- Effects of any proposed action on disadvantaged communities, including whether the action may cause or increase a disproportionate or inequitable or both disproportionate and inequitable pollution burden on a disadvantaged community.

The Cumulative Impacts Bill, an act amending the environmental conservation law, in relation to the location of environmental facilities, was signed on December 31, 2022, and goes into effect late June 2023. For more information, visit https://legislation.nysenate.gov/pdf/bills/2021/S8830.

NYS DEC's Commissioner's Policy 29 (CP-29) requires that proposed projects in, and/or that may adversely affect a Potential Environmental Justice Area (PEJA) as defined by NYS DEC, must undergo an enhanced public participation process to ensure meaningful participation for residents of impacted communities. Enhanced public participation includes the submission of a written Public Participation Plan (PPP) which outlines and describes the project that will be undertaken, as well as the activities the applicant will implement to actively seek public involvement and input during the application review process. The PPP seeks to facilitate direct communication with the affected community during the permit application review process.

For more information about the fair treatment and meaningful involvement of community members and the CP-29 policy, visit http://dec.ny.gov/get-involved/environmental-justice.

PENNSYLVANIA

ANAEROBIC DIGESTION (AD) FACILITY REGULATIONS

Air Regulations

AD facilities must comply with the fugitive emissions regulations under 25 Pa. Code, Chapter 123 (relating to standards for contaminants) issued under the Air Pollution Control Act. Permittees must comply with all the applicable provisions of 25 Pa. Code §§123.1 and 123.2 (relating to prohibition of certain fugitive emissions and fugitive particulate matter).

ADs produce digester gas, which consists of carbon dioxide and methane. A small amount of hydrogen sulfide (H_2S) may also be present. Due to the malodorous nature of H_2S, air permitting may be required for odor control. Additionally, any flaring or other combustion of the digester gas (including boilers, engines, and turbines) will emit air contaminants that may require air permitting.

Before an owner/operator of a facility can begin to construct, modify or operate a source, emissions unit or equipment emitting air contaminants in Pennsylvania, the owner/operator needs to obtain prior written approval from the Pennsylvania Department of Environmental Protection's (PA DEP) Air Quality Program. The process of obtaining an air permit generally consists of two steps. The first step is obtaining a pre-construction permit authorization, known as a plan approval, from the PA DEP. The plan approval allows the owner or operator to begin construction, installation or modification at their facility. The second step is obtaining an operating permit to allow actual operations at the facility.

Plan Approval: Plan Approval forms can be found here. Applications must be submitted with a compliance review form, general information form, copy and proof of county/municipal notifications, and the payment of appropriate fees according to the fee schedule. Applications are to be submitted to the appropriate DEP Regional Office or uploaded through the OnBase Electronic Forms Upload tool. Contact the Allegheny County Health Department or Philadelphia Air Management Services air programs for permits in those counties.

Applicants for a plan approval must show that emissions from a new source will be the minimum attainable through the use of the best available technology (BAT). BAT is a case-by-case determination that includes equipment, devices, methods or techniques as determined by the Department which will prevent, reduce or control emissions of air contaminants to the maximum degree possible and which are available or may be made available.

Operating Permits: Operating permit forms can be found here. Applications must be submitted with a compliance review form, copy and proof of county/municipal notifications, and the payment of appropriate fees according to the fee schedule. Applications are to be submitted to the appropriate DEP Regional Office or uploaded through the OnBase Electronic Forms Upload tool. Contact the Allegheny County Health Department or Philadelphia Air Management Services air programs for permits in those counties.

Request for Determination: Request for Determination (RFD) information can be found here. If air emissions are insignificant, the owner or operator may apply for a case-by-case exemption from plan approval, operating permit, or both. RFDs may be submitted to the appropriate DEP Regional Office or though the RFD*Online system. Contact the Allegheny County Health Department or Philadelphia Air Management Services air programs for permits in those counties.

Learn more about air quality regulations for Pennsylvania. Contact ra-epair@pa.gov with questions.

Solid Waste Regulations

Anaerobic digestion facilities must follow regulations under the Pennsylvania Solid Waste Management Act (SWMA), 35 P.S. §§ 6018.101–6018.100, and Municipal Waste Planning, Recycling and Waste Reduction Act of 1988, 53 P.S. §§4000.101, et seq.

In Pennsylvania, most entities that wish to manage materials that meet the definition of a municipal or residual waste through transfer, processing or disposal activities must obtain a permit issued by DEP to build, operate, expand, and close those facilities. This includes the receipt and processing of food waste materials through anaerobic digestion. In 25 Pa Code 271.1 (relating to definitions, municipal and residual wastes are defined as follows:

- **Municipal wastes** - Garbage, refuse, industrial lunchroom or office waste and other material, including solid, liquid, semisolid or contained gaseous material resulting from

operation of residential, municipal, commercial or institutional establishments and from community activities…" Additionally, sludge that does not meet the definition of residual or hazardous waste under 25 Pa. Code 271.1 (relating to definitions) from a municipal, commercial, or institutional water supply treatment plant, wastewater treatment plant or air pollution control facility is also a municipal waste.

- **Residual Wastes** -Garbage, refuse, other discarded material or other waste, including solid, liquid, semisolid or contained gaseous materials resulting from industrial, mining and agricultural operations; and sludge from an industrial, mining or agricultural water supply treatment facility, wastewater treatment facility or air pollution control facility, if it is not hazardous."

Waste Permitting

The two primary types of permits that would apply to anaerobic digester operations are general permits and individual permits:

- A general permit is a regional or Statewide permit issued by DEP for a specific category of beneficial use or processing of waste. Currently, DEP has over 100 general permits authorizing various categories of processing or beneficial use. If a general permit does not already exist to authorize a specific type of processing or beneficial use activity, an applicant can submit an application to DEP for a general permit, and DEP will both create a new "base" general permit, and issue coverage to the applicant underneath the base general permit. The terms and conditions of the base general permit allow the original applicant as well as any other entities that wish to apply for coverage underneath it, to operate if the terms and conditions of the general permit can be met. For more information on the general permit process, please see 25 Pa Code Chapters 271 and 284 of the municipal waste management regulations and Chapter 287 of the residual waste management regulations.
- An individual permit for the operation of an anaerobic digester would be either a municipal waste processing facility permit issued in accordance with 25. Pa Code Chapter 283, or a residual waste processing facility permit issued in accordance with 25 Pa Code Chapter 297, depending on what wastes will be received and processed by the facility.

There are also some specific circumstances when an individual or general permit would not be required:

1. When agricultural waste, which is a residual waste, produced during the course of normal farming operations is generated, processed, and beneficially used in a manner consistent with normal farming operations, a permit does not need to be obtain from the Department (see 25 Pa Code § 287.101.b.1.).
2. When agricultural operations use food processing waste or food processing sludge as the terms are defined in 25 Pa Code § 287.1 (relating to definitions) in the course of normal farming operations do not need to obtain a permit from the Department, provided best management practices identified in the Department's Food Processing Residual Management Manual (Document No. 254-5400-100) are followed (see 25 Pa Code § 287.101.b.2.). If an agricultural operation fails to implement best management practices for food processing waste, the Department may require compliance with the land application, composting and storage operating requirements of 25 Pa Code, Chapters 291, 295 and 299 (relating to land application of residual waste; composting facilities for residual waste; storage and transportation of residual waste).
3. When municipal or residual waste is anaerobically digested at the same site where some or all of the waste is generated, an operation may be eligible to operate under a "captive processing facility" permit-by-rule, provided certain requirements are met (see 25 Pa Code § 271.103.d. or § 287.102.b., for municipal or residual waste, respectively).

It is strongly recommended that entities reach out to the appropriate DEP Regional Office for assistance in determining whether an individual or general permit, or an alternative permitting avenue, is applicable.

Existing Waste General Permits

DEP currently has one general permit, General Permit No. WMGM042 (WMGM042), that authorizes the processing and beneficial use of waste through anaerobic digestion for on-farm operations. More specifically, WMGM042 authorizes:

1. The anaerobic digestion of animal manure on a farm mixed with one or more of the following:
   - Grease trap waste (collected from restaurants or grocery stores),
   - Pre-consumer and post-consumer food waste from commercial establishments, institutional establishments, or industrial food manufacturing operations.

2. The utilization of a depackaging unit(s) to mechanically separate pre-consumer and post-consumer food waste from commercial establishments, institutional establishments, or industrial food manufacturing operations, from its packaging, prior to anaerobic digestion.

3. The mixture of animal manure with authorized waste streams are hereinafter referred to as a "waste."

To operate under WMGM042, persons or municipalities must first obtain a registration from the appropriate Department Regional Office. No activities covered under the general permit are permitted to commence unless authorized by the Department in writing.

Applications submitted to the Department for registration under this general permit to utilize a depackaging unit(s), or to modify coverage under an existing authorization to utilize a depackaging unit(s), must specify the types of packaging materials that will be processed by the depackaging unit(s).

PA DEP is currently in the process of drafting a new General Permit that focuses on the processing, by anaerobic digestion, of combinations of sewage sludge, wastewater treatment residuals, grease trap waste, and pre- and post-consumer food waste from commercial establishments, institutional establishments, or industrial food manufacturing operations and a permitted sewage treatment facility or commercial digester. The timeframe by which this general permit is likely to be issued is currently unknown, but is anticipated sometime in Spring, 2024.

Regional Office locations and contact information can be found via the following: PA DEP Regional Offices

For more information on individual permitting, please see the following: Solid Waste Programs

For more information on general permitting, please see the following for municipal waste and residual waste general permits, respectively: Municipal Waste General Permits, Residual Waste General Permits

Additionally, anyone with general inquiries may contact RA-epwaste@pa.gov with questions.

Water Regulations

AD facilities (including areas of the facility where incoming waste is stored prior to placement in the digester or areas where waste generated from the digester is stored before being beneficially used) must not be located:

- In the 100-year floodplain of waters of the Commonwealth, unless the Department approves in the permit a method for protecting the facility from a 100-year flood consistent with the Flood Plain Management Act, 32 P.S. §§ 679.101 - 679.601 and the Dam Safety and Encroachments Act, 32 P.S. §§ 693.1 - 693.27.
- Within 100 feet of a perennial stream unless the storage and processing will not occur within that distance and no adverse hydrologic or water quality impacts will result.
- Within 300 feet of a water source unless the owner has provided a written waiver consenting to the facility being closer than 300 feet.

AD facilities are not authorized to discharge any waste, wastewater, or runoff from the site of processing to the land or waters of the Commonwealth.

Best Management Practices shall be implemented to divert storm water run-on from the storage area. Storm water runoff shall be managed in accordance with The Clean Streams Law and regulations promulgated thereunder. Prior to beginning operations at the facility, the operator must obtain all necessary storm water management permits.

PA DEP's Bureau of Clean Water (BCW) is responsible for administering the wastewater management program in Pennsylvania. The program involves oversight of activities, including:

- National Pollutant Discharge Elimination System (NPDES) permitting and compliance monitoring activities under Chapter 92a, which DEP implements pursuant to a Memorandum of Agreement (PDF) with the U.S. Environmental Protection Agency, for point source discharges from sewage, industrial waste and municipal and industrial stormwater facilities and other activities including the application of pesticides.

Contact RA-epwater@pa.gov with questions.

Environmental Justice

Pennsylvania's Office of Environmental Justice aims to ensure that residents, particularly those that have been disenfranchised, are meaningfully involved in the decisions that affect their environment and are not disproportionally burdened with adverse environmental impacts.

The Environmental Justice Advisory Board provides recommendations to the Secretary concerning policies, practices, and actions that DEP may implement to advance Environmental Justice goals. Learn more here.

PA DEP recommends for permit applicants the following:

- Familiarize yourself with the Office of Environmental Justice (OEJ).
- Become familiar with the Environmental Justice Enhanced Public Participation Policy.
- Contact the EJ coordinator in your region as needed.
- Engage the local community early in the process and schedule at least one public meeting. The EJ coordinator can assist in planning an effective community meeting.

The Environmental Justice Public Participation Policy is intended to increase community engagement in EJ Areas throughout the permitting process; particularly for Trigger and Opt-in permits. Included in the list are water, air, waste, and land permits that the EJ Policy encourages community outreach, public information disbursement, and public meetings. You can View details here. The OEJ Newsletter is a quarterly publication that provides the latest information and resources to benefit you and your community, consider subscribing to stay updated. Note that environmental complaints can also be submitted here: Environmental Complaints (pa.gov).

RHODE ISLAND

ANAEROBIC DIGESTION (AD) FACILITY REGULATIONS

Air Regulations

All AD facilities require an Air Pollution Control Permit regulated by 250-RICR-120-05-9 prior to commencing construction. A Minor Source Permit is required for stationary sources that have the potential to emit 25+ tons per year of any hazardous air pollutants or could increase emissions of any listed toxic air contaminants by greater than their minimum quantity (specified by 250-RICR-120-05-9.17). Minor Source Permits are also required for fuel burning devices that are designed to burn non-fossil liquid fuels with a heat input capacity of 5 million BTU or more per hour or gaseous fuel with a heat input capacity of 10 million BTU or more per hour. A Best Available Control Technology (BACT) Assessment must be completed for each potential pollutant along with an Air Quality Impact Analysis and any studies required by the Guidelines for Assessing Health Risks from Proposed Air Pollution Source. For greater emission producing facilities, a Major Source Permit may be required. Similarly, Major Source permits require a BACT, Air Quality Impact and Additional Impact analyses such as those impacting visibility, soils and vegetation. If toxic air contaminants are emitted, an Air Toxics Operating Permit may be required by 250-RICR-120-05-22.

The Anaerobic Digestion Waste Recycling Facility regulations specify odor control and air standards that must be met. All AD facilities must adhere to the R.I.G.L., Chapter 23-23 Clean Air Act (42 U.S.C. 7410), the State Air Pollution Control Act and Odor control, evaluations which are done by Rhode Island Department of Environmental Management (RIDEM).

For assistance and additional information about the air permits required for AD operation, please contact Laurie Grandchamp, the air resources administrator, at laurie.grandchamp@dem.ri.gov or (401) 222-2808 ext. 2777143 to be directed to the correct permitting specialist.

Solid Waste Regulations

All AD facilities are considered Waste Recycling Facilities and require licensing to construct and operate. Licensing requirements, facility design standards, and operating standards are outlined by 250-RICR-140-05-8. All AD facility operations must occur within an enclosed building, structure, or vessel. Any work outside of a sealed space will require a petition to the Department of Environmental Management Land Revitalization and Sustainable Materials Management explaining how the activity will not impact surrounding community members. AD facilities are required to have a back-up power supply or alternative method to protect human health and the surrounding environment. Anaerobic Digestion Design and Operating Standards (250-RICR-140-05-8) emphasize proper leachate, wastewater, and erosion control. Owners must maintain daily logs of facility activity for 3 years after beginning operation. Specific record contents are described in depth in 250-RICR-140-05-8, the Anaerobic Digestion Operating Standards. If the same entity of the AD facility composts digestate on- or off-site in RI, it will require registration as a waste composting facility also regulated by 250-RICR-140-05-8.

For assistance and additional information about the solid waste permits required for AD operation, please contact Mark Dennen at mark.dennen@dem.ri.gov or (401) 222-2797.

Water Regulations

Stormwater and Wastewater permits may be required depending on the location and discharge process during construction and operation. A Stormwater Construction Permit is most likely required when assembling a new AD facility. One application is used to apply for a Water Quality Certification and multiple permits including the Freshwater Wetlands, Groundwater Discharge/Underground Injection Control and the Rhode Island Pollutant Discharge Elimination Systems (RIPDES) Construction General Permit. The RI Pollutant Discharge Elimination System (RIPDES) is the overarching state water pollution control strategy and permits municipal and industrial wastewaters and stormwater. The Freshwater Wetlands Program is a state program governed by RIGL 2-1-20.1, 42-17.1, and 42-17.6 and regulates stormwater diversion to state wetlands.

AD facilities have additional water considerations under 250-RICR-140-05-8. All AD facilities must be constructed and operated outside of a 100-year flood plain area and be designed to manage water volume from a twenty-four (24) hour, twenty-five (25) year storm. Design and operation must outline erosion control and prevent water from entering enclosed facilities. Setback and buffer requirements are outlined under 250-RICR-140-05-8.10.13 and must be at least 200 feet

from any surface water or freshwater wetland. Additionally, AD operation standards must meet federal Clean Water Act standards and control stormwater, leachate and wastewater.

RIDEM Water Resources Permitting Program provides a pre-application service during the planning and design phase of a project. To schedule a pre-application meeting contact Ron Gagnon at Ron.Gagnon@dem.ri.gov.

For assistance and additional information about the water permits required for AD operation, please contact the Office of Water Resources at DEM.STWConstruction@dem.ri.gov or (401) 222-6820.

Environmental Justice

Rhode Island has a draft EJ Policy that was last updated May 2022. Consult with your state contacts about any EJ requirements as it applies to required permits and applications.

VERMONT

ANAEROBIC DIGESTION (AD) FACILITY REGULATIONS

Air Regulations

Required permits for AD facilities are determined by the Vermont Department of Environmental Conservation (VTDEC) Air Quality & Climate Division. Most facilities require a permit to construct and a permit to operate. A Permit to Construct is required to build or modify a stationary air pollution emitting source and confirm all new operations meet state emission requirements after construction. A Permit to Operate is enforced for all facilities that generate air pollution of criteria pollutants in aggregate of greater than 10 tons per year. Specific types of air pollution sources that require a Permit to Operate are defined in Section 5-401 of the Vermont Air Pollution Control Regulations. AD air permits focus more on the end use of biogas, such as electric power generation, rather than the physical facility since an internal combustion engine generates greater air pollution than burning using boiler or flare. If a facility installs an engine with a rating greater than 100 brake horsepower (bhp), it will require an air permit. Since both state-based permits incorporate all Clean Air Act federal requirements, separate federal air permits are unnecessary. Newly constructed operations will likely require reduced hydrogen sulfide levels to less than 40 parts per million, a 95% and 85% reduction of carbon monoxide and formaldehyde, respectively, to meet emission limits.

For assistance and additional information about the air permits required for AD operation, visit the Construction Permit Guidance Page at https://dec.vermont.gov/air-quality/permits/construction/application-guidance and contact an Air Permitting & Testing Consultant https://dec.vermont.gov/air-quality/permits/consultants. For additional questions, please contact the Permitting & Engineering Section Manager, Jay Hollingsworth at jay.hollingsworth@vermont.gov or (802) 272-3006.

Solid Waste Regulations

AD solid waste regulations depend on the digester location and food waste origin. Most off-farm digesters accepting post-consumer food must obtain an AD Solid Waste Facility Certification to satisfy Section 6-1202 of the Solid Waste Management Rules (SWMR). In addition to obtaining a certificate, all facilities must meet SWMR Subchapter 7 – General Siting, Design and Operating Standards – and submit proof of Financial Responsibility & Capability and private facilities must submit personal history and business disclosures. All facility applications must contain a public notice to adjoining property owners. Off-farm AD leachate and digestate management must meet pathogen treatment standards addressed in Section 6-1108(a) and land application guidelines under the Natural Resource Conservation Services Practice Standard 590, including a Nutrient Management Plan for leachate land application. All off-farm digesters processing, receiving, or storing solid waste require certification through SWMR Section 6-504. AD operations accepting food industry and processing waste must comply with additional substrate management regulations. These facilities adhere to H.656, substrate regulation including food processing wastes as an AD input, and the Indirect Discharge Program, which manages land application of food processing waste. Operations must meet Section 6-1207(b) recordkeeping and reporting requirements.

AD Facilities located on farms do not have the same permit requirements as off-farm facilities and have additional requirements regulated by the Vermont Agency of Agriculture Food & Markets (VAAFM). Operations must implement a Nutrient Management Plan and use Food Processing Waste/Ag Waste Import Forms to calculate accepted nitrogen, phosphorous and potassium quantities in pounds. Annual reporting is required for farms importing food waste. Any on-farm facilities that receive unprocessed food residuals for processing prior to introduction into a digester require certification as an Organic Solid Waste Facility outlined in Section 6-902(e). The VAAFM enforces additional on-farm regulations, including a Non-Sewage Waste Program that tracks imports to farms and may assess additional requirements. For assistance and additional information about additional on-farm requirements, please contact the VAAFM.

AD operations are responsible for proper management of biogas byproduct and must have functioning backup methods for biogas elimination. A Certificate of Public Good is required from the state public utility commission for permission to generate electricity from biogas and the specific use of the biogas may require additional permits.

For assistance and additional information about the solid waste permits required for AD operation, please contact the Solid Waste Management Program Permitting Specialist, Ben Gauthier at benjamin.gauthier@vermont.gov or (802) 522-5080.

Storm Water Regulations

AD facilities must meet siting and prohibited area requirements of the AD Solid Waste Facility Certification which include residing at least 500 feet from an outstanding resource water, 100 feet from a private water supply if unowned by the operation, and 100 feet from all state water sources. Low and moderate risk projects require a Construction Stormwater Runoff Permit, 3-9020, if one or more acres of land is disrupted. Construction deemed high risk requires an Individual Construction Stormwater Discharge Permit. Two additional operational stormwater permits may be required depending on the location of the AD facility. The 3-9050 permit, for stormwater runoff from impervious surfaces, is required for new development of half or more acres of impervious surface, redevelopments with the expansion of impervious surfaces by 5,000 square feet if the final area of surface will be more than 1 acre, sites with 3 or more acres of hardscape. A 3-9030 permit is required for discharges to the following watersheds: Bartlett, Centennial, Englesby, Morehouse and Potash Brook.

For assistance and additional information about stormwater permits please contact the Chris "Chip" Gianfagna, Stormwater Program Manager at Chris.Gianfagna@vermont.gov or 802-490-6174.

Environmental Justice

For questions about how the Agency of Natural Resources is navigating Environmental Justice issues, please contact Karla Raimundi-Devarie, Environmental Justice and Civil Rights Director at Karla.Raimundi@vermont.gov.

Other Considerations

To aid in permit applicability questions, Vermont created a permit navigator tool to help identify required permits based on single parcel projects: https://dec.vermont.gov/permitnavigator.

Vermont's Land Use Development Law Act 250 (10 V.S.A. Chapter 151) provides a public review process for large developments to confirm it meets community needs. Act 250 allows community members to participate in the development review process and resolve concerns before permits are issued. For additional information, please contact your local District Coordinator to determine if an Act 250 permit is required.

Vermont has three exciting programs incentivizing the purchase of residuals from the AD process. On-farm facilities can participate in the SPEED program and Cow Power Incentive that provide a monetary benefit for every kilowatt hour of biogas used to produced electricity. The Vermont Phosphorous Innovation Challenge, led by DVO, Inc. and the University of Vermont, funded two research studies to explore drying digestate outputs from ADs at dairy farms to develop a phosphorous product that can be utilized as fertilizers and soil amendments. The Spring 2022 update noted imperfect drying methods that required further testing to ensure nutrient availability for plants.