



Maryland
Department of
the Environment

Permitting Guidance for
Maryland Anaerobic Digestion Facilities

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Introduction

Anaerobic digestion facilities 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. This guidance document is intended to assist prospective anaerobic digestion facilities in identifying applicable state government laws and regulations. This document should not be used as a complete guide to all of the local, state, or federal statutory and regulatory requirements that may apply to a specific anaerobic digestion facility or all activities that could take place at such a facility. This guidance document is for informational purposes; proposed facilities should consult the law, Annotated Code of Maryland, and regulations, Code of Maryland Regulations (COMAR), for specific requirements.

MDE does not have stand-alone anaerobic digestion facility regulations or a permit. However, [Chapter 376 of 2017](#) directed MDE to convene a study group with recycling stakeholders to evaluate and assist in the development of regulations that: specify when a recycling facility is exempt from a refuse disposal permit; establish design, construction, and operational conditions for recycling facilities; and a separate system of permits or approvals applicable to recycling facilities. Any new recycling facility regulations that are proposed by the study group may amend current MDE regulations applicable to anaerobic digestion facilities. This guidance document will be updated as needed to incorporate any new recycling facility requirements. Additional information and contacts can be found on MDE's [Organics Diversion and Composting](#) webpage.

Table 1. Potential Requirements for Anaerobic Digestion Operations

Subject/Activity	Department Permits and Approvals	COMAR
MDE – Solid Waste and Recycling		
Solid Waste Acceptance Facility	Refuse Disposal Permit	26.04.07
Sewage Sludge Management	Sewage Sludge Utilization Permit	26.04.06
MDE – Water		
Storm Water Discharge from Industrial Activities	General Permit for Discharges of Stormwater Associated With Industrial Activity	26.08.04
Groundwater Discharges	State Groundwater Discharge Permit	26.08.04
Surface Water Discharges	State/NPDES Surface Water Discharge Permit	26.08.04
Discharges to Publicly Owned Wastewater Treatment Systems	Pretreatment Permit	26.08.08
Water and Sewerage Treatment Infrastructure Construction	Water and Sewerage Construction Permit	26.03.12
MDE – Air		
Sources of Air Pollution	Air Quality State Permit to Construct	26.11.02
	Air Quality State Permit to Operate	
MDA – State Chemist		

Subject/Activity	Department Permits and Approvals	COMAR
Digestate Quality	Soil Conditioner or Fertilizer Registration	15.18.03
PSC – Renewable Energy Generation		
Construct Electric Generating System	Certificate of Public Convenience and Necessity Exemption	20.79.01
Interconnection to an Electric Utility Distribution System	Standard Small Generator Interconnection Agreement	20.50.09
Generate Renewable Energy Credits	Certification of a Renewable Energy Generating Facility	20.61.02
Trade Renewable Energy Credits	Renewable Energy Credit Account	

MDE – Solid Waste and Recycling

Refuse Disposal Permit

MDE’s Land and Materials Administration issues a refuse disposal permit that regulates the handling and disposal of solid waste. Under the Environment Article, organic materials processed through anaerobic digestion are not exempt from the definition of “solid waste.” The law defines solid waste as “any garbage, refuse, sludge, or liquid from industrial, commercial, mining, or agricultural operations or from community activities,” including:

- Compostable organic materials that are not composted in accordance with MDE’s composting facility regulations (COMAR 26.04.11);
- Materials managed at a recycling facility that can’t be recycled (i.e. contaminants);
- Recyclable materials not returned to the marketplace as either raw material or product within a year of receipt at a recycling facility; or
- Recyclable materials that will not be managed in accordance with forthcoming regulations adopted pursuant to [Chapter 376 of 2017](#).

There are several types of solid waste acceptance facilities that require coverage under a refuse disposal permit, including a processing facility that changes the physical and chemical characteristics of solid waste (COMAR 26.04.07.02(B)(23)). An anaerobic digestion facility could require coverage under a refuse disposal permit and be regulated as a processing facility. The processing facility regulations require applicants to submit engineering plans and reports, operational and maintenance manual, and certification from a local government that the facility is consistent with the county’s Comprehensive Solid Waste Management Plan. However, MDE generally has determined that a refuse disposal permit is not required for an anaerobic digestion facility if:

- 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.

Also, a refuse disposal permit is not required for a proposed processing facility that is constructed at and operated for private use located at a school, apartment complex, industrial facility, hospital, commercial establishment, individual residence, farm, or similar locations (COMAR 26.04.07.23(A)(2)). For example, an anaerobic digestion facility or containerized digester processing on-site generated organic materials could be exempted from a refuse disposal permit.

Digestate and the Maryland Recycling Act

The Maryland Recycling Act (MRA) requires each county and Baltimore City to recycle either 20 percent or 35 percent of its solid waste stream depending on population size. The solid waste stream consists of “garbage or refuse that would, unless recycled, be disposed of in a refuse disposal system.” It excludes certain listed materials that were considered outside the scope of the municipal solid waste stream at the time the MRA was passed and waste generated by a single individual or business and disposed of in a facility dedicated solely for that entity’s waste. Based on the above definitions, in order for anaerobic digestion to contribute to a county’s MRA recycling rate, a facility must process material that is considered part of the MRA solid waste stream and return the material to the marketplace in the form of a raw material or product. If a facility accepts and digests MRA material, then that material would be counted as MRA recycling to the extent that the digestate is returned to the market. Credit will be issued based upon the percentage of digested material returned to the market place (e.g., if 80 percent of digested material is returned to the market place, 80 percent of the tons sent to the anaerobic digestion facility will count as recycled). Businesses can voluntarily report their production and marketing of digestate to their county government. Learn more about the MRA on the [Maryland State, County and City Recycling](#) webpage.

Sewage Sludge Utilization Permit

A wastewater treatment facility treating sewage through anaerobic digestion or co-digestion, with other non-sewage organic materials, will produce sewage sludge as a by-product. A Sewage Sludge Utilization Permit is required for a facility that manages sewage sludge or any product containing this material through several activities including treatment, transportation, storage, distribution, energy generation, and conducting innovative or research projects (COMAR 26.04.06.09). Some applicants may need to receive pre-approval from local governments that have delegated authority for septage management. Non-governmental applicants must comply with performance bond or other financial securities requirements outlined in COMAR 26.04.06.10.

Additional information and contacts for this permit are located on the MDE’s [General Instructions for Completing a Sewage Sludge Utilization Permit Application](#) webpage.

MDE – Water Quality Permits

Discharge Permits

MDE's Wastewater Permits Program (WWPP) issues permits to protect Maryland's water resources by controlling stormwater from industrial activities and wastewater discharges from municipal and industrial facilities.

Storm Water Discharge Permit

The federal Clean Water Act requires a facility whose primary activity falls within certain industrial sectors to obtain a permit for storm water discharges. MDE issues a General Permit for Storm Water Discharges Associated with Industrial Activity, a combined state and federal storm water permit authorized under the National Pollution Discharge Elimination System (NPDES) permit program. An anaerobic digestion facility may require coverage under this permit if its primary activity falls under one of the following industrial activities (identified through a [Standard Industrial Classification \(SIC\) code](#)):

- Sector A- Timber Products
 - SIC 2499 – Wood Products, Not Elsewhere Classified (includes natural wood waste)
- Sector C - Chemical and Allied Products Manufacturing
 - SIC Code 2869 - Industrial Organic Chemicals (methane generation)
 - SIC Codes 2873 through 2875 - Agricultural Chemicals (manufacturing and mixing fertilizers)
- Sector T - Treatment Works
 - SIC Code 4952 - Sewerage Systems

If an anaerobic digestion facility is located at a site where other activities are taking place, such as agriculture, the applicant must determine if any of the abovementioned covered industrial activities are the primary activities occurring at the facility.

If coverage is required under a General Permit for Storm Water Discharges Associated with Industrial Activity, a permittee must:

- Install and implement certain control measures that are documented in a Storm Water Pollution Prevention Plan;
- For operations categorized as Sector C-Chemicals and Allied Products Manufacturing, conduct quarterly benchmark monitoring and reporting, for at least a year, to assess the effectiveness of control measures;
- Conduct quarterly visual monitoring; and
- Complete annual Comprehensive Site Compliance Evaluation to track inspection findings, incidences of exposure, corrective actions taken, and maintenance of control measures needed.

Agricultural Operation Based Anaerobic Digestion

A farm is a site operated for the primary purpose of tilling, cropping, keeping, pasturing or producing an agricultural product. An Animal Feeding Operation (AFO) is a facility where non-aquatic animals are confined, fed, and maintained for at least 45 days in any 12-month period; crops, vegetation, forage growth, or post-harvest residues are not sustained in the normal growing season over any portion of the lot or facility. At a site that conducts anaerobic digestion along with other agricultural operations, such as those described above, the following factors should be considered in determining the site's primary purpose:

- The revenue generated from agricultural activities versus the revenue generated from anaerobic digestion (i.e. digestate sales or feedstock tipping fees);
- The number of employees or amount of employee time spent on operating an anaerobic digestion facility; and
- The portion of on-site space or activity directly devoted to anaerobic digestion.

An anaerobic digestion facility designed and operated in a manner that prevents exposure of industrial materials to precipitation can apply for a "No Exposure Certification" in lieu of permit coverage. Additional information and contacts for this permit are located on MDE's [General Discharge Permit](#) webpage.

Wastewater Discharge Permits

An anaerobic digestion facility that discharges wastewater, such as effluent from the digester or a pulping process, into waters of the state may require a surface water or groundwater discharge permit.

The state groundwater discharge permit is required for the disposal of treated municipal and industrial wastewater into the state's groundwater through land applications (i.e. spray irrigation), a subsurface drain field, or a seepage pit. A groundwater discharge permit contains discharge limitations and other requirements that the MDE deems necessary to protect public health and groundwater quality.

MDE also issues surface water discharge permits, which are combined state and federal NPDES permits to control the discharge of municipal or industrial wastewater into surface waters of the state. These permits are designed to meet federal effluent guidelines, when applicable, and ensure the wastewater discharge satisfies state water quality standards under COMAR 26.08.02. An anaerobic digestion facility may also require a separate pretreatment permit if they propose to discharge industrial (non-domestic) wastewater to a publicly owned wastewater treatment system. The pretreatment permit is issued by a local municipal wastewater treatment utility, with an approved program delegated by MDE, and a permittee must comply with the pretreatment requirements for industrial users of publicly owned wastewater treatment systems under COMAR 26.08.08.

Additional information and contacts concerning wastewater permits are located on MDE's [Wastewater Permits Program](#) webpage.

Water and Sewerage Construction Permit

MDE's Engineering and Capital Projects Program reviews and issues the Water and Sewerage Construction Permit for the development of major water and wastewater systems infrastructure. This permit is designed to ensure that water quality infrastructure projects meet certain engineering principles and comply with state design guidelines to protect Maryland's water quality and public health. A water and sewerage construction permit may be required for the construction or modification of a publicly or privately operated anaerobic digestion facility if the facility is located within and serving a major sewage treatment plant that is funded by MDE and/or permitted under a Water and Sewerage Construction Permit. COMAR 26.03.12.02B(6) defines a major sewerage system as a system that includes structures and equipment that collects, conveys and treats wastewaters generated from domestic, industrial, and commercial establishments.

Proposed facilities applying for coverage under this permit must be included in the current Water and Sewer Comprehensive Plan for the county in which the facility will be located. Also proposed facilities must demonstrate satisfaction with the Capacity Development Assessment Program, required under COMAR 26.04.01.36, which includes 1) certification that a facility will be operated under a sound financial management plan, and 2) the facility's design meeting certain federal and state engineering standards.

Additional information and contacts for this permit are located on MDE's [Water and Sewerage Construction Permit Applications and Forms](#) webpage.

MDE – Air Quality Permits

While the activity of anaerobic digestion does not meet the state's definition of air pollution, certain equipment that could be used at an anaerobic digestion facility may need an air quality permit. MDE's Air and Radiation Administration issues a Permit to Construct and a Permit to Operate for sources of air pollution to ensure that they are operated in compliance with all applicable requirements of the federal Clean Air Act as well as the state's air pollution control laws and regulations under COMAR 26.11.

Permit to Construct

A Permit to Construct (PTC) 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 include boilers/process heaters, screening systems, grinding/shredding machinery, drying equipment, and stationary internal combustion engine powered equipment with an output greater than or equal to 500 brake horsepower (BHP). To facilitate the permitting process, a PTC may incorporate different

individual units or process lines into one permit document. Electric powered mobile sources equipment does not require a PTC. Also, COMAR 26.11.02.10 exempts several air pollution source from a PTC, such as fuel-burning equipment with a heat input less than 1 million British thermal units (MBtu) per hour and internal combustion engines with an output less than 500 BHP.

Permit to Operate

Sources of air pollution with the potential to significantly affect air quality must be covered under a Permit to Operate (PTO). A PTO includes operational limits, work practices, monitoring, testing, recordkeeping, and reporting conditions. While a PTC may include temporary operating conditions that allow a facility to initiate operations to conduct emission tests and stabilize operations, a PTO is issued once MDE determines an operation has demonstrated compliance with all applicable air quality requirements. Sources that require a PTO are listed in COMAR 26.11.02.13. Sources which may be present at an anaerobic digestion facility that would require a PTO include stationary internal combustion engines that are powered by digester gas, crushing equipment, and any installation that MDE determines has the potential to have a significant impact on air quality (COMAR 26.11.02.13A(64)). MDE typically issues a single PTO for several installations or processes located at a single facility.

Additional information and contacts for this permit are located on MDE's [Air Quality Permitting](#) webpage.

What is Air Pollution?

Air pollution is defined under COMAR 26.11.01.01B(2) as “the presence in the outdoor atmosphere of substances in quantities, having characteristics, and being of a duration which, from any single source or in combination with other sources, are, or may be predicted with reasonable certainty to be, injurious to human, plant, or animal life or to property, or which unreasonably interfere with the proper enjoyment of the property of others by reason of the emission of odors, solids, vapors, liquids, or gases, throughout the State and in such areas of the State that are affected by them.”

MDA – Digestate Quality

MDA's State Chemist Section regulates the sale and distribution of soil conditioners, including digestate, in Maryland. Distributors of digestate are required to annually register each brand and grade of commercial fertilizers or each product name of soil conditioners (COMAR 15.18.03.02). To register digestate as a commercial fertilizer, the distributor must include a legal claim of the digestate's minimum percentages of plant nutrient content; these percentages cannot change after registration. To register digestate as a soil conditioner, the distributor must only include a statement of digestate composition. MDA regulations also include testing and classification, labeling, and recordkeeping requirements. Distributors must submit a semiannual report on the

tons of digestate distributed in the state and pay a 25-cent fee per ton of digestate distributed. MDA administers the [State Chemist Section Registration and Reporting](#) online portal, where distributors can register and renew their products with MDA and registrants track their products sold in Maryland.

Additional information and contacts for the State Chemist are located on MDA's [State Chemist Section](#) webpage.

PSC – Renewable Energy Generation

Certificate of Public Convenience and Necessity Exemption

PSC regulates electric utilities operating in Maryland, sets tariff rates for electricity distribution, approves the construction of electric generating stations, and licenses electric suppliers. An anaerobic digestion facility that proposes to construct or modify a small electric generating station must obtain permission to construct from PSC. COMAR 20.79.01.02 excludes generating stations with a capacity less than or equal to 2 megawatts (MW) from coverage under a Certificate of Public Convenience and Necessity (CPCN) or CPCN waiver. Section 7-207.1 of the Public Utilities Article authorizes a CPCN waiver for the construction of electricity generating stations if:

- The station has a capacity no greater than 70 MW and electricity exported will be sold on the wholesale market under an interconnection, operation, and maintenance agreement with the local electric company; or
- The station has a capacity no greater than 25 MW; exported electricity will be sold on the wholesale market under an interconnection, operation, and maintenance agreement with the local electric company and a least 10 percent of total annual generated electricity is consumed on-site.

Applicants should first contact their local electric distribution company to determine if an interconnection, maintenance and operation agreement is required; if necessary, the agreement must be filed with PSC before permission to construct is granted. An applicant also must apply for and obtain all necessary MDE air quality permits prior to constructing or operating a generator. The application process requires applicants to notify governing bodies of local jurisdictions and members of the General Assembly representing impacted counties of the CPCN waiver application and for PSC to provide an opportunity for public comment.

Additional information and contacts for CPCN waivers are located on PSC's [CPCN Exemption](#) webpage.

Interconnection and Renewable Energy Distribution

The following PSC approvals are required if an anaerobic digestion facility producing a Tier 1 renewable energy source proposes to interconnect to an electric distribution system in order 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 sources. Qualifying biomass is defined as organic material available on a sustainable basis that is either:

- Separated from inorganic material and derived from several organic sources including yard trimmings (excluding invasive exotic plant species) co-digested with manure to produce biogas; or
- A plant cultivated for use as a Tier 1 renewable source.

The requirements to receive PSC approval for interconnection and renewable energy distribution for eligible anaerobic digestion facilities are as follows.

Standard Small Generator Interconnection Agreement

COMAR 20.50.09.02 defines a small generator facility as the equipment used to generate or store electricity that operates in parallel with an electric distribution system. The PSC's standard small generator interconnection regulations of COMAR 20.50.09 establish technical and application requirements for a requesting small generator facility and the reviewing electric distribution company. An eligible small generating facility's interconnection equipment must be lab-certified and field-approved and comply with the general application and technical requirements of COMAR 20.50.09.06. A small generator facility that is subject to the interconnection requirements of PJM Interconnection is not subject to PSC's standard small generator interconnection regulations. Small generator interconnection agreement applications are available on the websites of [electric utility companies operating in Maryland](#).

PJM Interconnection, LLC

The PJM Interconnection, LLC is a regional transmission organization that operates a competitive wholesale electricity market and manages the reliability of its transmission grid. Maryland is one of the 13 states where PJM dispatches generation and coordinates the transmission of wholesale electricity. Learn more about PJM Interconnection, LLC on its [website](#).

Generate and Trade Renewable Energy Credits

An anaerobic digestion facility that produces electricity from a Tier 1 renewable source that would like to participate in Maryland's Renewable Portfolio Standard must apply for certification as a renewable energy source provider with the PSC. Applicants also must certify compliance with all applicable environmental and administrative requirements as outlined in §7-704 of the Public Utilities Article. No later than 30 days after certification as a renewable energy facility, an anaerobic digestion facility must contact the [PJM Environmental Information Services](#) to establish a Generation Attribute Tracking System account (COMAR 20.61.02.02).

Additional information and contacts concerning participation in Maryland's Renewable Energy Portfolio Standard are located on PSC's [Renewable Energy](#) webpage.

MDE “Approval Fact Sheets”

MDE has compiled “Approval Fact Sheets” to assist potential applicants in determining whether a particular approval may be required. Here are links to “Approval Fact Sheets” for MDE permits and approvals described above:

- [1.02 Air Quality Permit to Construct](#)
- [1.05 Air Quality State Permit to Operate](#)
- [1.21 Energy Facilities Permitting Information: Certificate of Public Convenience & Necessity](#) *Note, this fact sheet describes the application process for PSC’s CPCN or CPCN waiver approvals.
- [2.01 Refuse Disposal Permit](#)
- [2.03 Sewage Sludge Utilization Permits](#)
- [3.01 Surface Water Discharge Permit \(Industrial\)](#) *Note, this fact describes the pretreatment permit.
- [3.03 General Discharge Permit for Storm Water Associated with Industrial Activity](#)
- [3.04 Surface Water Discharge Permit \(Municipal\)](#)
- [3.05 Ground Water Discharge Permit \(Municipal or Industrial\)](#)
- [3.07 Water and Sewerage Construction Permit](#)