

## Biodigester Survey

Community	Term / Definitions	Districts (Louisville Equivalent)	Type of Approval	Setbacks and Height	Buffering and Screening	Other
<b>Regulations</b>						
Louisville, KY (LDC Chapter 1, Part 2; Sec. 4.2.37; Sec. 4.3.16)	Accessory Alternative Energy System <sup>i</sup>	Any	Permitted With Standards	<p>Attached – In residential districts the system may not exceed 10’ above the maximum height within the underlying form district.</p> <p>Attached – In non-residential districts, the system may not exceed 20’ above the maximum height within the underlying form district.</p> <p>Freestanding – The proposed system shall not exceed the maximum building height of the underlying form district.</p>	See base district	<p>Attached – In residential districts no system shall be attached to the wall or side of a structure.</p> <p>Freestanding - No more than 25% of the lot area may be covered with alternative energy systems and related equipment.</p>
	Non-Accessory Alternative Energy System <sup>i</sup>	OR, OR-1, OTF, OR-2, OR-3, CN, C-1, C-2, C-3, C-M, M-1, M-2, M-3, EZ-1, PEC, PRO, W-1, W-2	Conditional Use Permit	Minimum setback of 50’ from any property line.	Shall be screened as a utility substation, which is Intensity Class 5. Requires a 25 to 50-foot buffer where adjacent to residential with 3 large trees and 8’ screen per 100’ if buffer is 50’ wide. 4.5 trees and 8’ screen per 100’ if buffer is less than 50’ wide.	<p>Requires review and approval from the Air Pollution Control Board (as does any CUP).</p> <p>Maximum noise level at property line is 65 dBa.</p>
Brookhaven, NY (Zoning Ordinance Sec. 85-552)	An area or facility designed for disposal, storage and/or collection of organic biodegradable waste for the purpose of processing same into renewable natural gas and fertilizer.	L-I, Light Industry (M-1)	Town Board Special Permit	<p>75’ minimum setback</p> <p>50’ maximum height</p>	A minimum seventy-five-foot buffer, consisting of natural and undisturbed vegetation, supplemented as needed, shall be provided between an anaerobic digester facility and all adjacent residentially zones or use.	<p>Minimum lot area of 60 acres</p> <p>Minimum lot width of 400’</p> <p>No anaerobic digester facility within an historic district or historic district transition area</p>
England and Wales (Standard rules SR2012 No12)	“Anaerobic digestion” means a process of controlled decomposition of biodegradable materials under managed conditions where free oxygen is absent, at temperatures suitable for naturally occurring mesophilic or thermophilic anaerobe and facultative anaerobe bacteria species, which convert the inputs to a methane-rich biogas and whole digestate.	N/A	N/A	N/A	N/A	Shall not be permitted within: <ul style="list-style-type: none"> <li>(a) 33’ of any watercourse;</li> <li>(b) a groundwater source protection zone 1, or if a source protection zone has not been defined then within 165’ of any well, spring or borehole used for the supply of water for human consumption. This must include private water supplies;</li> <li>(c) a specified Air Quality Management Area;</li> <li>(d) 660’ of the nearest residence or public space (structure to structure)</li> </ul>

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Franklin, MA (unapproved from Town Council Packet from May 15, 2013)	See definition in footnote. <sup>ii</sup>	N/A	N/A	N/A	N/A	N/A
Germany (Technical Instruction on Air Quality Control)	N/A	N/A	N/A	N/A	N/A	Minimum separation from residential is 1,000' for enclosed installations and 1,600' for open installations (unknown if structure to structure or property line to property line)  Minimum distance may be reduced if emissions are reduced or biogas is treated in a purification facility
Lowville, NY (Town Code, Chapter 100 Alternate Energy Production)	Anaerobic Digester – A facility the main purpose of which is to use anaerobic digestion to convert livestock and poultry manure (primary catalyst) and feedstock into biogas, which is generally burned on site to produce electricity, heat and water as well as to manage livestock and poultry manure. Anaerobic digesters may include codigestion in which the livestock and poultry manure may be mixed with other organic materials (secondary catalysts). <sup>iii</sup>	Small anaerobic digesters - Any zone where agricultural uses are permitted  Large anaerobic digesters – Prohibited use	Small anaerobic digesters – Permitted by right as an accessory use only  Large anaerobic digesters - Prohibited use	Small anaerobic digesters – Minimum 100' from side property line, 100' rear property line, 300' from any residential structure other than that of the property owner and 100' from any public road right-of-way.  Large anaerobic digesters - Prohibited use	N/A	Small anaerobic digesters – Minimum lot size is 10 acres  Small anaerobic digesters – See submittal requirements in footnote <sup>iv</sup>
Mount Joy, PA (Zoning Ordinance Sec. 135-250)	Accessory Anaerobic Digester	Agricultural Zoning District (N/A)	By right; property must be at least 10 acres.	75' from side or rear property line, 115' from right-of-way, 150' from any dwelling other than property owner.	N/A	N/A
	Large Anaerobic Digester	GI, General Industrial (M-2 or M-3)	Special Exception	200' from any property line. 300' from any residential building (owner may waive this in writing)	N/A	N/A

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St. Louis Park, MN (Zoning Ordinance Sec. 36-244)	Must be an accessory use	I-G, General Industrial (M-2 or M-3)	Conditional Use Permit	See base district	See base district	Organic material only; Max. 30k tons organic material processed per year; Must occur completely within a negative-pressure building; Delivery directly into an enclosed container integrated with the digester system; Sorting of material must occur in an enclosed container integrated with digester system; Odor control shall be used to prevent odors from being detectable outside of the building; Flaring only allowed to burn excess gas and shall not be visible from off-site; No outdoor storage allowed; Retail distribution of compressed natural gas not allowed; All necessary permits relating to items such as: emissions, solid waste processing, energy production, industrial waste water, and storm water must be obtained from the appropriate agencies; All necessary contracts or agreements with material providers and utility companies must be submitted to the City prior to the issuance of a building permit.
<b>Specific Cases</b>						
Louisville – GE Power and Water – Morris Foreman Treatment Plant	Non-Accessory Alternative Energy System <sup>1</sup>	M-3	N/A	N/A	N/A	~2,000' from nearest residence (property line to property line)  Separated by Shawnee Expressway.

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<p>Louisville – Proposed Conditions for 15CUP1023</p>	<p>Non-Accessory Alternative Energy System<sup>i</sup></p>	<p>OR, OR-1, OTF, OR-2, OR-3, CN, C-1, C-2, C-3, C-M, M-1, M-2, M-3, EZ-1, PEC, PRO, W-1, W-2</p>	<p>Conditional Use Permit</p>	<p>50' setback 40' height</p>	<p>10' landscape buffer area to be provided along portions of the South 17th Street frontage. Additional screening is being provided in the form of a proposed 3' masonry wall with black aluminum picket style fencing along both South 17th Street and Maple Street.</p>	<p>No deliveries by rail spur; Will accept material from no more than 10 trucks per day; Must be enclosed tanker trucks; 70% from distillery; ½ of remaining 30% must come from immediate area; All must come from Jefferson County; Star will install fence line methane monitoring equipment and take readings at least quarterly and Report to West Jefferson county Community Task Force.</p> <p>Star shall inspect odor control equipment contained in the Odor Handling Unit and perform regular maintenance on said equipment as recommended by the manufacturer to ensure its proper and effective operation. Quarterly reports shall be provided to the staff of Louisville Metro Planning and Design Services to document that regular maintenance and inspection has occurred. Trucks delivering organic materials to the facility shall not be offloaded until they are parked inside the building labeled "Liquid Receiving", all exterior Building doors are completely closed, and any internal air handling systems designed to collect odor or prevent air from leaving the Building are turned on and functioning properly. Said Building shall be regularly cleaned to ensure that no materials remain on floors, and no materials shall be stored in the Building for more than 24 hours without being placed into the Liquid Waste Receiving Tank.</p> <p>No outdoor storage of feedstock materials or filtering chemicals shall be provided on the site.</p>

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Louisville – Outer Loop Landfill	Accessory Alternative Energy System	M-3	Permitted with Standards	870' to nearest property line Height is undetermined	No specific buffering or screening for digester	~4,000' from nearest residence (structure to structure) ~2,100' from nearest residence (property line to property line) (separated by I-65)
Louisville – Parallel Products – Dixie Highway	Accessory Alternative Energy System	EZ-1	Permitted with Standards	125' from nearest property line Height is undetermined	Narrow treeline adjacent to residential	~125' from nearest residence Adjacent to nearest residential property line
Brookhaven, NY – Long Island Compost Corporation	N/A	L-I, Light Industry (M-1)	Town Board Special Permit	Undetermined	Undetermined	~1,200' from nearest residence (property line to property line)
Buckner, KY – Accessory to ConAgra	N/A	I-2, Heavy Industrial (M-3)	Permitted by right as an accessory use	~60' from side property line Height is undetermined	180'-200' wide wooded area separates from residential	~1,000' from nearest residence (structure to structure) Adjacent to nearest residential property line
Huntington Woods, MI – Detroit Zoo	N/A	Park-Recreation (N/A)	Conditional Use Permit	Setbacks are undetermined 21' height	See base district.	~1,500' from nearest residence (structure to structure) Hours of operation are 7 AM to 5 PM
Sacramento, CA – American River Packaging	N/A	M-1, Light Industrial (M-1)	Conditional Use Permit	~25' from street and 0' from adjacent railroad right-of-way Height is undetermined	30' wide street buffer with 4 mature trees	~500' from nearest residence (structure to structure)
Saint Helens, OR – St. Helens Organics Recycling	N/A	HI, Heavy Industrial (M-2/M-3)	Conditional Use Permit	Undetermined	Undetermined	~2,000' from nearest residence (property line to property line)
University of Wisconsin Oshkosh Urban Anaerobic Dry Digester – Oshkosh, WI	N/A – Treated as a public or quasi-public utility	M-2, Central Industrial (M-2)	Conditional Use Permit	~70' from side properties lines ~120 from rear property lines 36' height	None required by base district.	Conditions of Approval: Incorporate landscape screening to the south, as approved by the Department of Community Development. Gravel areas of development area to be restored to vegetative ground cover. No outdoor storage of material, machinery or equipment  ~ 840' from nearest residence (structure to structure)

<sup>i</sup> Any facility or installation such as a windmill, hydroelectric unit or solar collecting or concentrating array, which is designed and intended to produce energy from natural forces such as wind, water, sunlight, or geothermal heat, or from biomass, for on-site or off-site use. The off-site use shall not be for public usage, which would be deemed a Public Power Plant.

## **Biodigester Survey**

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<sup>ii</sup> ANAEROBIC DIGESTER - A structure or series of structures where a biological process, anaerobic digestion, breaks down or “digests” organic waste materials in the absence of oxygen, and through utilization of separators, biogas recovery systems and other processes, produces digestate and biogas, which are further processed for production of soil amendment, fertilizer, electric energy, pipeline quality natural gas, and similar commercial products.

<sup>iii</sup> LARGE ANAEROBIC DIGESTER An anaerobic digester which accepts animal waste, feedstock, and/or other organic waste generated off site or from more than one farm. It is noted that any system with a nameplate generating capacity of 25 megawatts or more is subject to the requirements, terms and conditions of Article 10 of the New York State Public Service Law.

SMALL ANAEROBIC DIGESTER An anaerobic digester primarily intended to reduce on-site consumption of utility power. A system is considered a small anaerobic digester only if it supplies electricity or thermal power for on-site use, except that when a property upon which the facility is installed also receives electrical power from a utility company, excess electrical power not presently needed for on-site use may be used by the utility company. Small anaerobic digesters use livestock and poultry manure and other feedstock generated on site by one farm and are designed and intended solely to generate power to offset utility costs. Small anaerobic digesters may include codigestion.

<sup>iv</sup> The permit applicant shall address and document performance standards for siting to minimize impacts on neighboring properties which shall include considerations of: (1) Prevailing wind patterns; (2) Proximity to residential and other nonagricultural properties regardless of how they are zoned; (3) Operational noise; (4) Specific hours of operation with regard to truck traffic. The application shall be accompanied by documentation from a person qualified to design and install the proposed system, explaining all details of construction, operation, maintenance and necessary controls related to the system.