

CURRENT BEST AVAILABLE CONTROL TECHNOLOGY (BACT) REQUIREMENTS

**For air emissions from commercial anaerobic digester-gas-to-electricity (AD) operations
(involving internal combustion engines and flares) located in
Massachusetts performing anaerobic digestion of source-separated organic (SSO) (and other digestible) material**

Source Type	Fuel	Pollutant	Emission Limitations (lb/MW-hr)
IC Engines	Biomass Digester Gas	NOx	0.50
		CO	0.60
		PM 2.5/ PM10	0.030
		CO ₂	1000
			See Note 4
		VOC	0.30
		SO ₂	0.50
	H ₂ S	See Note 5	

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Source Type	Fuel	Pollutant	Emission Limitations (lb/1000 scfm gas flared)
Flares See Note 2	Biomass Digester Gas	NO _x	2.70
		CO	13.70
		PM 10/ PM2.5	0.15
		CO ₂	7105
		VOC	0.55
		SO ₂	See Note 5
		H ₂ S	See Note 5

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Key Abbreviations:

lbs/hr = pounds per hour

NO_x = nitrogen oxides

CO = carbon monoxide

CO₂ = carbon dioxide

PM₁₀ = particulate matter 10.0 microns or less

PM 2.5 = particulate matter 2.5 microns or less

VOC = volatile organic compounds

SO₂ = sulfur dioxide

H₂S = hydrogen sulfide

lb/MW-hr = pounds per megawatt hour output

scfm = standard cubic feet per minute

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Notes

1. This policy applies to either any commercial AD facility digesting/processing SSO or any AD facility with an electrical output capacity of greater than 500 kilowatts (kw).
2. All digester gas generating sources shall be totally enclosed and vented to either the IC engine or “back-up” flare. All sources with odor potential shall be controlled to prevent nuisance odor conditions. SSO, and any other material to be digested, shall be delivered to the facility in a completely sealed manner; and shall be pumped from the delivery trucks to the digestion system in a closed loop manner.
3. Back-up flares must be utility flare design with the flame shielded such that there is no exposed flame. Emission limits in Table are “not to be exceeded” values. MassDEP will set individual flare limits on a case-by-case basis, depending upon actual flare rating and inlet gas flow rate.
4. Facility-wide CO₂ caps are undefined for this source category. The CO₂ emission limit for the engine is based upon CO₂ emissions resulting from combustion of methane only.
5. H₂S emissions are regulated by restricting the inlet H₂S emissions to the IC engine and flare to less than or equal to 200 ppm. SO₂ emissions are based upon 99.5 percent oxidation of 200 ppm H₂S inlet emissions to the IC engine and flare.
6. MassDEP will set individual facility-wide limits on a case-by-case basis depending upon actual engine and flare ratings.