Anaerobic Digestion in NYS

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New York City – both a voluntary and mandatory approach

> Voluntary collection from schools, residences, city agencies

> Composting at Rikers Island, Fresh Kills Composting Facility, Community Compost Sites

> Anaerobic digestion at Newtown Creek WWTP
Anaerobic Digesters at Newtown Creek

New York City Organic Recycling
NYC Mandatory Food Waste Separation and Recycling

> the Commissioner of Sanitation annually makes a determination if sufficient capacity exists within 100 miles and can mandate separation and recycling

> applies to food manufacturers, food wholesalers, retail food stores, arenas, stadiums, hotels meeting size limitations (10,000 square feet for retail food stores, etc.)

> law takes effect July 1, 2015
Anaerobic Digestion

- 20 on-farm ADs
- 2 private regional ADs – Quasar
- 1 municipal regional AD – Cayuga County
- 2 POTWs taking off-site organics: Johnstown-Gloversville taking FAGE whey
- Pilot AD – City of Watervliet
- Design stage regional AD – Long Island
- NYC??
- ~ 130 ADs at POTWs

[Map of Anaerobic Digesters in New York state]
NYSERDA & NYPA

- Promoting ADs through funding and technical assistance
- $23.6 million (NYSERDA) + $5 million (NYPA)
- $2 million cap per project + payment per kwh
- Consultant contract to provide assistance to farms to develop projects
Regulation of ADs in NYS

- Division of Air Resources – engine emissions
- Division of Water – CAFOs
- Division of Materials Management – solid waste regulations

Solid Waste Regulations
6 NYCRR Part 360
Solid Waste Management Facilities

- 360-4 Land Application Facilities
- 360-5 Composting Facilities
- [www.dec.ny.gov/regs/4411.html](http://www.dec.ny.gov/regs/4411.html)

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Part 360 vs. CAFO Rules

**CAFO Farm** –
CAFO rules apply regardless of the type or quantity of waste applied
Part 360 may apply in limited circumstances

**Non-CAFO Farm**
Part 360 rules apply only if waste is accepted from off-site
The type of Part 360 regulation depends on the type and quantity of waste
Levels of Regulation Under Part 360

- Exemption
- Registration
- Permit

Exempt Facilities

- On-Site ADs (not for sludges)
- ADs for farm wastes
- ADs on CAFOs (no sanitary, >50% manure)
Registered Facilities

- ADs < 50TPD (no sanitary)

Permitted Facilities

- Everything that is not exempt or registered

- Any amount of biosolids, septage, MSW
Environmental Concerns – AD

- Odor
- Surface and groundwater impacts
- Product quality
  - Pathogen reduction
  - Vector attraction reduction
  - Maturity
  - Pollutant standards
- Incoming waste quality
  - Heavy metals
Regulation of Digestate (Solids, Liquids, or both)

- Depends on:
  - > what goes in the AD (biosolids, manure, food, etc.)
  - > how is the AD operated (Class B, Class A, neither)
  - > is there any additional treatment after AD (composting, etc.)
  - > how will it be used:
    - * land application
    - * composting
    - * animal bedding
    - * topsoil blending
    - * other?

Regulation of Digestate

- Exempt – use of digestate if the AD only accepts manure and crop residues
- Exempt – use of digestate if the AD is located on CAFO and no sanitary waste is accepted. Land application must be under a CNMP
- Exempt – use as bedding or topsoil from a Registered AD, composting requires Registration
- AD accepts sanitary waste – digestate regulated as biosolids (Class B or Class A)
- Registration – composting or land application of digestate from a permitted AD (no sanitary), exempt use for bedding or topsoil
Pathogen Reduction Standards

- Two Classes: Class A and Class B
- Class B: at least one log (90%) reduction
- Class A: reduced to below detectable levels (at least two log – 99% reduction)

Class B Options

- Anaerobic Digestion: 15 days 35C or greater; 60 days at <35C but >20C
- Fecal coliform count: geometric mean of 7 samples are <2,000,000 CFU
Class B Restrictions

- Public access restricted for 30 days to one year
- Human food crops can not be grown for 14 months if the edible part is above soil, 38 months if below soil
- Feed can not be harvested for 30 days
- No grazing for 30 days

Class A Options

- Composting after AD: 3 days at 55C, 15 days at 55C for windrow
- Organism testing - viruses, helminth ova
- Thermophilic digestion:
  - $D = \frac{131,700,000}{10^{0.14t}}$ or $D=50,070,000/10^{0.14t}$
Use of digestate is a form of recycling

- However, this fact does not guarantee public acceptance.

“DEC permits are fast-tracked for Equate”

“Marilla board votes to extend Equate ban”

“Quasar plan reminds residents of Love Canal, threatens local produce sales”
DEC Accused of Breaking the Law by Niagara County Lawmakers

Chemists tells concerned Wheatfield residents the EPA’s rules on sludge are outdated

Buffalo News: Ceretto, Cliffe rip DEC over biosolids regulation

Don’t poison our land by spreading biowaste - Opinion - The Buffalo News

Wheatfield residents assail fertilizer from sewage sludge

Wheatfield passes ban on future use and storage of biosolids

Quasar sues to overturn Wheatfield biosolids ban