



# *Anaerobic Digestion Air Permitting*

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# Air Applications

The Department has seen anaerobic digestion used in the following areas that required an air permit:

- **Anaerobic digestion to generate a syngas**
  - **Power production**
  - **Biofuels**
- **Fertilizer**
- **Waste Reduction**

Some projects: Harvest Energy Garden (power production & fertilizer) and several projects at dairy farms (bio-natural gas)



# Air Emission Sources

- **Use syngas for power production**
  - **Engines**
  - **Combustion turbines**
  - **Industrial boilers**
  - **All the above also would have a flare**
- **Fertilizer – Flare**
- **Waste Reduction – Flare**
- **A flare is required in any application to deal with the syngas during startup/shutdown/malfunctions**



# Need An Air Permit?

- Determine emissions (TPY) from all sources (**could be exempt**)
  - NO<sub>x</sub>
  - CO
  - PM, etc.
- Are there federal requirements?
  - New Source Performance Standards (NSPS)
  - National Emission Standards for Hazardous Air Pollutants (NESHAP)
- Are there state & local requirements?
- Objectional odors always a concern



# Federal Requirements

- **Combustion turbines subject to NSPS Subpart KKKK**
- **Engines subject to NSPS and NESHAP RICE rules?**
- **Flares generally not subject to federal requirements**
  - **Maybe subject to opacity standard**
- **Biofuels generally won't be subject to air requirements**



# State & Local Requirements

- **Objectionable odors are prohibited**
- **Project specific, recommend pre-application meeting**
- **Requirements can vary by county**



# Where Do You Go for Permit?

- **Division of Air Resource Management (DARM) is 1<sup>st</sup> stop (See next slide for contact information)**
- **District programs**
  - Northwest (Pensacola)
  - Northeast (Jacksonville)
  - Central (Orlando)
  - Southwest (Tampa)
  - South (Ft Myers)
  - Southeast (Palm Beach)
- **Local programs (counties)**
  - Miami-Dade
  - Palm Beach
  - Orange
  - Broward
  - Hillsborough
  - Pinellas (no permitting)
  - Sarasota



# The Golden Rule

- **In general, each project is different. Contact the Department (next slide) to get assistance to determine if an air permit will be required. In Florida, an air construction permit is first required for a new facility. After construction and compliance testing is completed, an air operation permit must be obtained which is valid for a period of 5-years.**





**Questions?**

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