

*The public reporting and record keeping burden for this collection of information is estimated to average 30 minutes per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.*

## Data Tracking Form for Stand-Alone Anaerobic Digesters

### Introduction

This survey is designed to gather data about stand-alone anaerobic digesters. Completion of this survey is voluntary. The data collected will be aggregated prior to its release. Individual facility information will not be disclosed to the public. Thank you for taking the time to provide this valuable information. Your input is greatly appreciated.

One focus of EPA's Sustainable Materials Management Program is to increase the rate of diversion of organic materials from landfills. As diversion efforts become more successful in the United States, more processing capacity is needed to manage the diverted materials. A portion of this much needed capacity is provided by anaerobic digestion facilities.

EPA is collecting the data requested in this survey to quantify and track organic materials processing capacity and to document the increases in this capacity. The survey is also collecting data on types of feedstocks processed and the end uses of anaerobic digestion products. EPA will use the data to help measure and evaluate the effectiveness of our efforts to promote anaerobic digestion for organics recycling.

Effort was taken to make this survey as streamlined as possible. Please contact us at [R3\\_AD\\_Data@epa.gov](mailto:R3_AD_Data@epa.gov) with any questions about the survey or suggestions for improvement.

### Type of Stand-Alone digester

**Instructions:** This survey is designed to gather data for stand-alone anaerobic digesters. These digesters may take other feedstocks but they are typically designed to process the organic fraction of municipal solid waste. Feedstocks at stand-alone facilities can include yard waste, or other organic materials, but the primary feedstock is food-based materials.

- a. Q1. Which of the following choices best describes your facility? Multi-source Food Digester - A type of stand-alone digester that accepts and processes organic materials (feedstocks) for a tipping fee. Most often feedstocks are obtained from multiple sources. These digesters are often designed to manage source-separated waste streams from one or more municipality or institution. Other sources of feedstock may include processing waste from the food and beverage industry, wasted food from the food service or retail industries, or fats, oils and greases (FOG).

- b. Industry dedicated digester – A type of stand- alone digester that is typically developed adjacent to a food or beverage processing plant to process the waste from that plant. These digesters do not typically accept organic materials from other sources for tipping fees.
- c. Other - if your facility does not fall into one of the above categories check here and provide a description of your operation below.

**Facility operating status:**

**Note:** The respondent will be directed to the appropriate follow-up question (Q3 – Q8) depending on the answer to this question (Q2).

Q2. Please identify the status of your facility

- Planning stage/Design stage/Permitting process
- Under construction
- Operational
- Temporary shut-down
- Ceased operation
- Other

Q3. What is the targeted date for your facility to be operational?

Q4. What date did your facility become operational?

Q5. What date did your facility temporarily shut-down?

Q6. What is the targeted date for your facility to re-start operations?

Q7. What date did your facility cease operations?

Q8. Please state the reason your facility ceased operations.

**Facility Total Capacity**

**Instructions:** Feedstocks may be received at your facility in both liquid and solid form. In the spaces provided below, please provide the total capacity of your facility for receiving liquids and/or solids. All capacity information will be treated as confidential business information. Data will only be released to the public in aggregate so that data from any one individual facility cannot be ascertained.

Q9. Is the total capacity available at your facility for processing feedstocks measured in gallons per year or tons per year?

Q10. Please provide the total capacity of your facility in the units identified above.

Q11. During year the 2015, how many months was your facility operational?

**Instructions:** The following questions focus on the amount of food-based feedstocks that are processed in your digester.

Food-based feedstocks include, but are not limited to:

- Fruit/vegetative wastes
- Food processing industry waste
- Beverage processing industry waste
- Food service waste, pre & post-consumer
- Food waste
- Source-separated commercial, institutional or residential organic wastes
- Fats, oils and greases (FOG)
- Rendering wastes

Q12. Does your facility accept and process food-based feedstocks? (Y/N)

**Note:** If the answer to Q12 is “yes” – respondent is directed to Q13.

If the answer to Q12 is “no” – respondent is directed to Q15.

**Instructions:** The food-based feedstocks received at your facility may be in liquid form, solid form or both. For Q13 and Q14 please provide the total volume of the liquids in gallons and the total weight of the solids in tons. Please answer 0 if you do not receive feedstocks in either solid form or liquid form. The amount of materials processed at your facility will be treated as confidential business information. Data will only be released to the public in aggregate so that data from any one individual facility cannot be ascertained.

Q13. What was the total volume of food-based materials received in liquid form and processed at your facility during the 2015 calendar year? Please express your answer in gallons.

Q14. What was the total weight of food-based materials received in solid form and processed at your facility during the 2015 calendar year? Please express your answer in tons.

The following questions focus on the amount of non-food-based feedstocks that are processed in your digester.

Non-food-based feedstocks include, but are not limited to:

- Mixed yard waste
- Crop residues
- Manures
- Wastewater solids (sludge)

- Septage
- Litters
- De-icing fluid
- Lab (or Pharma) wastes
- Paper mill wastes
- Crude glycerine

Q15. Does your facility accept and process non-food-based feedstocks? (Y/N)

**Note:** If the answer to Q15 is “yes” – respondent is directed to Q16.

If the answer to Q15 is “no” – respondent is directed to Q18.

**Instructions:** The non-food-based feedstocks received at your facility may be in liquid form, solid form or both. In the spaces provided below, please provide the total volume of the liquids in gallons and the total weight of the solids in tons. Please answer 0 if you do not receive feedstocks in either solid form or liquid form. The amount of materials processed at your facility will be treated as confidential business information. Data will only be released to the public in aggregate so that data from any one individual facility cannot be ascertained.

Q16. What was the total volume of non-food-based materials received in liquid form and processed at your facility during the 2015 calendar year? Please express your answer in gallons.

Q17. What was the total weight of non-food-based materials received in solid form and processed at your facility during the 2015 calendar year? Please express your answer in tons.

### **Types of Feedstocks**

Q18. Please identify the specific types of feedstocks that are processed in your digester. Check all that apply.

**Note:** The feedstocks selected in Q18 get carried forward to Q22.

- Beverage processing industry waste
- Crop residues
- Crude glycerine
- De-icing fluid
- Fats, oils and greases (FOG)
- Food processing industry waste
- Food service waste, pre & post-consumer
- Fruit/vegetative wastes
- Lab (or Pharma) wastes
- Poultry litters
- Manures
- Mixed yard waste
- Paper mill wastes
- Rendering wastes
- Retail food waste

- Septage
- Source-separated commercial, institutional or residential organic wastes
- Wastewater solids (sludge)
- Other (please specify)

### **Tipping Fees**

The following questions focus on fees charged for accepting and processing organic feedstocks at anaerobic digestion facilities (AKA Tipping Fees). Tipping fee information will be treated as confidential business information. Data will only be released to the public in aggregate so that data from any one individual facility cannot be ascertained.

EPA encourages generators of wasted food and other organic waste to divert such materials from landfill disposal because it is better for the environment. With data on tipping fees from facilities that process organics in an environmentally sound manner, generators will have more information to evaluate the cost of recycling vs. landfilling. This information will support the nationwide effort to more sustainably manage the vast quantities of food that is wasted each year.

Q19. Are your tipping fees equal for all materials? (Y/N)

**Note:** If the answer to Q19 is “yes” – respondent is directed to Q20.

If the answer to Q19 is “no” – respondent is directed to Q22.

Q20. Which of the following ranges best represents your tipping fees for processing liquid materials?

- N/A – Facility does not process liquid feedstock.
- Prefer not to say
- \$0.00-\$0.05 per
- \$0.06-\$0.10 per gallon
- \$0.11-\$0.20 per
- \$0.21-\$0.50 per gallon
- \$0.51-\$1 per gallon
- > \$1 per gallon

Q21. Which of the following ranges best represents your tipping fees for processing solid materials?

- N/A – Facility does not process solid feedstock.
- Prefer not to say
- \$0-\$10 per ton
- \$11-\$20 per ton
- \$21-\$30 per ton
- \$31-\$40 per ton
- \$41-\$50 per ton

- \$51-\$60 per ton
- \$61-\$70 per ton
- \$71 or more per ton

Q22. You indicated that you collect the following types of feedstocks. The feedstocks identified in your answer to question Q18 above will be listed on this page. Are the feedstocks liquid (with tipping fees in dollars per gallon) or solid (with tipping fees in dollars per ton) or both?

**Note:** If the answer to Q22 for a particular feedstock is “liquid” – respondent is directed to Q23.

If the answer to Q22 for a particular feedstock is “solid” – respondent is directed to Q24.

If the answer to Q22 for a particular feedstock is “both” – respondent is directed to Q23 and Q24.

Q23. You indicated that you receive and process the feedstocks identified below in liquid form. The feedstocks identified in your answer to question Q22 above will be listed on this page. Which of the following ranges best represents your tipping fee for these liquid feedstocks?

- Prefer not to say
- \$0.00-\$0.05 per
- \$0.06-\$0.10 per gallon
- \$0.11-\$0.20 per
- \$0.21-\$0.50 per gallon
- \$0.51-\$1 per gallon
- > \$1 per gallon

Q24. You indicated that you receive and process the feedstocks identified below in solid form. The feedstocks identified in your answer to question Q22 above will be listed on this page. Which of the following ranges best represents your tipping fee for these solid feedstocks?

- Prefer not to say
- \$0-\$10 per ton
- \$11-\$20 per ton
- \$21-\$30 per ton
- \$31-\$40 per ton
- \$41-\$50 per ton
- \$51-\$60 per ton
- \$61-\$70 per ton
- \$71 or more per ton

Q25. Please identify the sources of the feedstocks that are processed at your facility. Check all that apply.

- Airports

- Biodiesel production
- Corporate complexes
- Farmers Markets
- Food/Beverage Processors
- Fruit/Vegetable Farms
- Grocery Stores/Supermarkets
- Healthcare
- Hospitality
- Industrial
- Laboratories/Pharmaceutical Companies
- Livestock Farms
- Municipal/Residential
- Prisons
- Restaurants and Food Service
- Retail Stores
- Schools
- Sports and Entertainment Venues
- Wastewater Treatment Plants
- Other (please specify)

Q26. Please describe any pre-processing/de-packaging that is occurring at your facility.

Q27. Please identify the following specifications for your digester.

- Temperature range
- Wet or Dry
- Batch or continuous
- Number of stages

### Product End-Uses

**Instructions:** It is recognized that the metrics that facilities use to measure biogas production may vary. EPA does not expect you to convert your measurements.

Q28. Please provide the average biogas production volume at your facility during calendar year 2015 in one of the units identified below.

Standard Cubic Foot per Minute (SCFM)

Standard Cubic Foot per Day (SCFD)

Standard Cubic Foot per Year (SCFY)

Other

Q29. Is the biogas produced at this facility used onsite or sold?

Q30. Please identify how the biogas produced at this facility is used. It could be used onsite by the facility or offsite by a purchaser. Check all that apply.

- Produce mechanical power
- Produce heat and electricity (CHP)
- Produce electricity (including net metering)
- Produce electricity (sold to grid)
- Fuel boilers and furnaces to heat digesters
- Fuel boilers and furnaces to heat other spaces
- Compressed to vehicle fuels: used for company fleet/personal vehicles
- Compressed to vehicle fuels: sold to customers
- Renewable natural gas (processed in order to inject to pipeline)
- Other (please specify)

Q31. Are you able to utilize all of the biogas produced? (Y/N)

**Note:** If the answer to Q31 is “yes” – respondent is directed to Q33.

If the answer to Q31 is “no” – respondent is directed to Q32.

Q32. Do you flare the excess biogas? (Y/N)

Note: Both answers lead to Q33.

Q33. Do you have a gas purification system? (Y/N)

**Note:** If the answer to Q33 is “yes” – respondent is directed to Q34.

If the answer to Q33 is “no” – respondent is directed to Q36.

Q34. What type of gas purification system do you have?

Q35. What is removed by your gas purification system? Check all that apply.

- Moisture
- Sulfur
- Siloxanes
- Carbon Dioxide
- Compressed Gas
- Other (please specify)

Q36. Do you beneficially re-use the solid digestate you produce? (Select all that apply)

- Yes, de-watered/dried and land applied
- Yes, land applied as is with no dewatering or drying
- Yes, composted into a reusable or salable product
- Yes, processed into other salable products (e.g., flower pots)
- No, landfilled

- No, incinerated
- Other (please specify)

Q37. If any digestate was disposed of in landfills or incinerated in 2015, please specify the amount in tons or gallons (if known).

Q38. Is the de-watered/dried digestate further treated prior to land application? (Y/N)

**Note:** If the answer to Q38 is “yes” - respondent is directed to Q39.

If the answer to Q38 is “no” - respondent is directed to Q40.

Q39. Please indicate what the further treatment is and why it is necessary.

Q40. How do you manage the liquid digestate you produce? Check all that apply.

- Beneficially reused as fertilizer via land application
- Recirculated through digester
- Discharged to a wastewater treatment plant
- Other (please specify)

Q41. Is the liquid digestate further treated prior to land application? (Y/N)

**Note:** If the answer to Q41 is “yes” - respondent is directed to Q42.

If the answer to Q33 is “no” - respondent is directed to Q43.

Q42. Please indicate what the further treatment is and why it is necessary.

Q43. Do you recover nutrients from your digestate?

- No
- Yes, phosphorous recovery by chemical precipitation (e.g., struvite)
- Yes, ammonia recovery
- Other (please specify)

## **Project/Facility Information**

**Instructions:** To allow interested parties to identify the general location of anaerobic digestion facilities in the United States, the following information will be shared on EPA's anaerobic digestion website: name of the facility, EPA Region, State, City, Facility Type and operational status. EPA will not disclose the exact address of any facility or information that could be used to identify you or any individual responding to this survey.

Q44. Please provide the following information about your Project/Facility.

Project/Facility Name

Street address

City/Town

State

Zip code

Phone Number

Q45. Please provide the following information for the contact person for facility operations

Name

Title

Email Address

Phone number

Q46. Please provide the contact address (if different from Facility Address)

Street address

City/Town

State

Zip code