

## Data Tracking Form for Stand-Alone Anaerobic Digesters

### Introduction

#### **2019 Stand-Alone Digester Survey**

Thank you for your continued participation in EPA's AD data collection project!

The survey has been streamlined making it even easier to submit your data. Two years of operating data (2017 and 2018) will be collected this year. Completion of this survey is voluntary.

We hope the reports EPA has produced based on this data are useful to you and the rest of the biogas industry. As with previous years, the data collected through this survey will also be aggregated prior to its release. Thank you for taking the time to provide survey data. Your input is greatly appreciated.

The goals of this project have not changed. EPA is collecting the data requested in this survey to quantify and track the amount of food waste processed and available processing capacity in the United States. The survey also requests information on types of feedstocks processed, the sources of feedstocks and the end uses of anaerobic digestion products. This year (2019) is the third year of the project.

Please [contact us](#) with any questions about the survey or suggestions for improvement.

*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

### Facility and Contact Information

To allow interested parties to verify the completeness of EPA's research, general information (facility name, city, state, facility type and operational status) will be included in the report of findings (2020). All annual reports will be posted on EPA's anaerobic digestion website.

#### \* 1. Project/Facility Information

<b>Project/Facility Name</b>	<input type="text"/>
<b>Street Address</b>	<input type="text"/>
<b>City/Town</b>	<input type="text"/>
<b>State</b>	-- select state -- <input type="button" value="v"/>
<b>ZIP/Postal Code</b>	<input type="text"/>
<b>Phone Number</b>	<input type="text"/>

#### \* 2. Contact person for facility operations:

<b>Name</b>	<input type="text"/>
<b>Title</b>	<input type="text"/>
<b>Email Address</b>	<input type="text"/>
<b>Phone Number</b>	<input type="text"/>

3. If you do not wish to have your facility's general information (facility name, city, state, facility type and operational status) included in future EPA reports, please check the box below.

Please do not include the information above in future publications summarizing the data collected via this survey.

## Data Tracking Form for Stand-Alone Anaerobic Digesters

### Type of Stand-Alone Digester

This survey is designed to gather data for stand-alone anaerobic digesters. There are two main categories of stand-alone digesters:

**Multi-Source Food Digester** - A type of stand-alone digester that accepts and processes feedstocks from offsite sources. These feedstocks are accepted both for their tipping fee revenue and their biogas yield potential. These digesters are sometimes called "merchant digesters." Feedstocks are predominantly food waste, although non-food waste feedstocks (e.g., manure and wastewater solids) may also be processed at stand-alone digesters. In most instances, feedstocks are obtained from many different sources.

**Industry Dedicated Digester** - A type of stand-alone digester that is typically developed to manage food waste generated from a single business (e.g., grocery store chain, food or beverage processing plant). These digesters do not typically accept organic materials from other sources for tipping fees.

\* 4. Which of the following choices best describes your facility?

- Multi-Source Food Digester
- Industry Dedicated Digester
- Other - (please specify)

## Data Tracking Form for Stand-Alone Anaerobic Digesters

### Facility Operating Status

\* 5. Facility operating status:

- Planning stage; Design stage; Permitting Process
- Under construction
- Operational
- Temporary shut-down
- Ceased operation
- Other (please specify)

Data Tracking Form for Stand-Alone Anaerobic Digesters

Planning Stage; Design Stage; Permitting Process

\* 6. What is the targeted date for your facility to become operational (MM/DD/YYYY)?

## Data Tracking Form for Stand-Alone Anaerobic Digesters

### Under Construction

\* 7. What is the targeted date for your facility to become operational (MM/DD/YYYY)?

## Data Tracking Form for Stand-Alone Anaerobic Digesters

### Operational

8. What date did your facility become operational (MM/DD/YYYY)?

## Data Tracking Form for Stand-Alone Anaerobic Digesters

### Temporary Shut-down

9. What date did your facility temporarily shut-down (MM/DD/YYYY)?

10. What is the targeted date for your facility to re-start operations (MM/DD/YYYY)?



## Data Tracking Form for Stand-Alone Anaerobic Digesters

### Ceased Operation

11. What date did your facility cease operations (MM/DD/YYYY)?

12. Please state the reason your facility ceased operations:

## Data Tracking Form for Stand-Alone Anaerobic Digesters

### Facility Total Capacity

Instructions: Multi-source food digesters may receive feedstocks in both liquid and solid form. Industry-dedicated digesters may process feedstocks that are either liquid or solid. In the spaces provided below, please provide the total capacity of your facility for receiving/processing liquids and/or solid feedstocks.

For the purposes of this survey, total processing capacity is the maximum amount of feedstock an anaerobic digester can accept per unit time. In this case, the unit of time is one year. Total capacity must be equal to or greater than the combined amount of food waste and non-food waste processed in any given year.

13. In accordance with the instructions provided above, please provide the total capacity of your facility in one of the units specified below.

Gallons per year

Tons per year

## Data Tracking Form for Stand-Alone Anaerobic Digesters

### Months of Operation

\* 14. During year the 2017, how many months was your digester operational?

\* 15. During year the 2018, how many months was your digester operational?

## Data Tracking Form for Stand-Alone Anaerobic Digesters

### Food-Based Feedstocks

The following questions focus on the amount of food-based feedstocks or food waste that is 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
- Retail food waste
- Source-separated commercial, institutional or residential organic wastes
- Fats, oils and greases (FOG)
- Slaughterhouse wastes

\* 16. Does your digester accept/process food-based feedstocks?

Yes

No

## Data Tracking Form for Stand-Alone Anaerobic Digesters

### Amount of Food Waste Processed in 2017 & 2018

The food-based feedstocks (food waste) received/processed 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 received/processed in gallons and the total weight of the solids in tons for the years specified. If you receive/processed all food-based feedstocks in only one form, indicate "0" in the other space.

- \* 17. What was the total volume of food-based materials received/processed in liquid form at your facility during the 2017 calendar year? Please express your answer in gallons.

- \* 18. What was the total weight of food-based materials received/processed in solid form at your facility during the 2017 calendar year? Please express your answer in tons.

- \* 19. What was the total volume of food-based materials received/processed in liquid form at your facility during the 2018 calendar year? Please express your answer in gallons.

- \* 20. What was the total weight of food-based materials received/processed in solid form at your facility during the 2018 calendar year? Please express your answer in tons.

## Data Tracking Form for Stand-Alone Anaerobic Digesters

### Non-Food-Based Feedstocks

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
- De-icing fluid
- Lab (or Pharma) wastes
- Paper mill wastes
- Crude glycerin

\* 21. Does your facility accept/process non-food-based feedstocks?

- Yes
- No

## Data Tracking Form for Stand-Alone Anaerobic Digesters

### Amount of Non-Food-Based Feedstocks Processed in 2017 & 2018

The non-food-based feedstocks received/processed 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 received/processed in gallons and the total weight of the solids received/processed in tons. If you receive all non-food-based feedstocks in only one form, indicate "0" in the other space.

- \* 22. What was the total volume of non-food-based materials received/processed in liquid form at your facility during the 2017 calendar year? Please express your answer in gallons.

- \* 23. What was the total weight of non-food-based materials received/processed in solid form at your facility during the 2017 calendar year? Please express your answer in tons.

- \* 24. What was the total volume of non-food-based materials received/processed in liquid form at your facility during the 2018 calendar year? Please express your answer in gallons.

- \* 25. What was the total weight of non-food-based materials received/processed in solid form at your facility during the 2018 calendar year? Please express your answer in tons.

## Data Tracking Form for Stand-Alone Anaerobic Digesters

### Types of Feedstocks Processed

\* 26. Have the types of feedstocks received/processed in your digester changed since you last responded to this survey?

- Yes
- No
- This is my first response to this survey.



## Data Tracking Form for Stand-Alone Anaerobic Digesters

### Types of Feedstocks Processed

\* 27. Please identify the specific types of feedstocks that are received at/processed in your digester. Check all that apply.

- Beverage processing industry waste
- Crop residues
- Crude glycerin
- 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
- Landfill leachate
- Manures
- Mixed yard waste
- Paper mill wastes
- Retail food waste
- Septage
- Slaughterhouse wastes
- Source-separated commercial, institutional or residential organic wastes
- Wastewater solids (sludge)
- Other (please specify)

## Data Tracking Form for Stand-Alone Anaerobic Digesters

### Tipping Fees

The following questions focus on fees charged for accepting and processing feedstocks at anaerobic digestion facilities (AKA Tipping Fees).

\* 28. Do you collect tipping fees?

Yes

No

## Data Tracking Form for Stand-Alone Anaerobic Digesters

### Tipping Fees

\* 29. Are you willing to share information about the tipping fees you collect?

Yes

No

## Data Tracking Form for Stand-Alone Anaerobic Digesters

### Tipping Fee Revenue

This data is being gathered to analyze revenue potential for the biogas industry. An approximation of revenue collected is acceptable. If your facility was not operational during any of the years identified below, please indicate "N/A" or "0".

30. How much revenue did your facility collect in tipping fees in 2017?

31. How much revenue did your facility collect in tipping fees in 2018?

32. If you would like to provide any other relevant or important information related to tipping fees, please do so below.

## Data Tracking Form for Stand-Alone Anaerobic Digesters

### Feedstock Sources

\* 33. Have the sources of the feedstocks received/processed in your digester changed since you last responded to this survey?

- Yes
- No
- This is my first response to this survey.

## Data Tracking Form for Stand-Alone Anaerobic Digesters

\* 34. Please identify the sources of the feedstocks that are processed at your facility. Check all that apply.

- Airports
- Biodiesel production
- Corporate complex
- 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)

## Data Tracking Form for Stand-Alone Anaerobic Digesters

### Pre-Processing Information

\* 35. Are pre-processing or de-packaging activities conducted on your feedstocks before they are added to your digester?

Yes

No

## Data Tracking Form for Stand-Alone Anaerobic Digesters

### Pre-Processing Information

36. Do pre-processing /de-packaging activities occur offsite or at your facility?

- Offsite
- Onsite (at your facility)
- Both



## Data Tracking Form for Stand-Alone Anaerobic Digesters

### Pre-Processing Information

37. Please identify the pre-packaging or de-packaging activities that are conducted at your facility. Check all that apply.

- Manual or mechanized de-packaging
- Screening for debris or sorting
- Grinding and/or maceration
- Third party processing
- Shredding
- Heating
- pH adjustment
- Centrifugal separation
- Liquid/solid separation
- Other (please specify)

## Data Tracking Form for Stand-Alone Anaerobic Digesters

### Digester Operating Parameters

38. Please identify the operating temperature range for your digester.

- Mesophilic
- Thermophilic
- Unheated/Ambient

39. Please indicate if your digester is “wet” or “dry.”

- Wet, low-solids system, less than 15% (by volume) solids content.
- Dry, high-solids system, greater than 15% (by volume) solids content.

40. Please identify the design that best fits your design type/configuration:

- Continuously Stirred Tank Reactor (CSTR)
- Plug-flow
- Covered Lagoon
- Fixed film
- Suspended Media
- Percolating Bed
- Upflow Anaerobic Sludge Blanket (UASB)
- Anaerobic Sequencing Batch Reactor (ASBR)
- Membrane Bioreactor (MBR)
- Hybrid/Multi-stage
- Other (please specify)

## Data Tracking Form for Stand-Alone Anaerobic Digesters

### Product End-Uses - Biogas Volume

It is recognized that the metrics that facilities use to measure biogas production may vary. EPA does not expect you to convert your measurements. Please provide the average biogas production volume at your facility in one of the units identified below.

Standard Cubic Foot (SCF)

#### 41. For calendar year 2017

SCF per minute (SCFM)	<input type="text"/>
SCF per day (SCFD)	<input type="text"/>
SCF per year (SCFY)	<input type="text"/>
Other	<input type="text"/>

#### 42. For calendar year 2018

SCF per minute (SCFM)	<input type="text"/>
SCF per day (SCFD)	<input type="text"/>
SCF per year (SCFY)	<input type="text"/>
Other	<input type="text"/>

## Data Tracking Form for Stand-Alone Anaerobic Digesters

### Product End-Uses - Biogas Location

43. Is the biogas produced at this facility used onsite, sold, or flared? (check all that apply)

Used onsite

Sold

Flared

## Data Tracking Form for Stand-Alone Anaerobic Digesters

### Product End-Uses - Biogas

\* 44. Please identify how the biogas produced at this facility is used. Check all that apply:

- Produce mechanical power
- Produce heat and electricity (CHP)
- Produce electricity used behind the meter (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
- Renewable natural gas (processed in order to inject to pipeline)
- Other (please specify)

## Data Tracking Form for Stand-Alone Anaerobic Digesters

### Product End-Uses - Biogas Utilization

\* 45. Are you able to utilize all of the biogas produced?

Yes

No

## Data Tracking Form for Stand-Alone Anaerobic Digesters

### Product End-Uses - Biogas Excess

46. Do you flare excess biogas?

Yes

No

## Data Tracking Form for Stand-Alone Anaerobic Digesters

### Product End-Uses - Biogas Purification

\* 47. Do you have a gas cleaning system?

Yes

No



## Data Tracking Form for Stand-Alone Anaerobic Digesters

### Product End-Uses - Biogas Purification Details

48. What is removed by your gas cleaning system? (select all that apply)

- Moisture
- Sulfur
- Siloxanes
- Carbon dioxide
- Compressed gas
- Hydrogen sulfide
- Particulates
- OxygenNitrogenVOCs
- Nitrogen
- VOCs
- Other (please specify)

## Data Tracking Form for Stand-Alone Anaerobic Digesters

### Product End-Uses - Digestate

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

- Yes, de-watered/dried and land applied
- Yes, composted into a reusable or salable product
- Yes, processed into animal bedding
- Yes, processed into other salable product (e.g., flower pots)
- No, landfilled
- No, incinerated
- Other (please specify)

50. If any digestate was disposed of in landfills or incinerated in 2017, please specify the amount in tons or gallons (if known):

51. If any digestate was disposed of in landfills or incinerated in 2018, please specify the amount in tons or gallons (if known):

## Data Tracking Form for Stand-Alone Anaerobic Digesters

### Digestate Land Application

\* 52. Is the de-watered/dried digestate further treated prior to land application?

Yes

No

Data Tracking Form for Stand-Alone Anaerobic Digesters

Digestate Land Application Further Processing

53. Please indicate what additional processing occurs and why.

## Data Tracking Form for Stand-Alone Anaerobic Digesters

### Digestate Processing

\* 54. How do you manage the liquid digestate you produce? (Select all that apply)

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

## Data Tracking Form for Stand-Alone Anaerobic Digesters

### Digestate Land Application

\* 55. Is the liquid digestate further treated prior to land application?

Yes

No

Data Tracking Form for Stand-Alone Anaerobic Digesters

Digestate Land Application Further Processing

56. Please indicate what additional processing occurs and why.

## Data Tracking Form for Stand-Alone Anaerobic Digesters

### Digestate Nutrient Recovery

57. Do you recover nutrients from you digestate?

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

Please click DONE to submit your data.