EPA LMOP Session: Partnership Opportunities

Lauren Aepli
Program Manager
EPA
Aepli.Lauren@epa.gov

Ellen Meyer
Program Manager
EPA
Meyer.Ellen@epa.gov

Chris Carusiello
Environmental Engineer
EPA
Carusiello.Chris@epa.gov

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Anaerobic Digestion Facilities Processing Food Waste in the United States

Year Two Survey Results
OVERVIEW

1. Background
2. Goals
3. Scope of Facilities
4. Results
5. Conclusion & Next Steps
6. Excess Food Opportunities Map
By 2030:
Let’s cut the amount of food we waste in half.
DATA COLLECTION GOALS

- Identify the number and location of AD facilities
- Document processing capacity & track it over time
- Types of feedstocks and sources
- Amount of food waste processed
- Amount of biogas produced
- Analyze the end-uses of AD products
SCOPE OF FACILITIES

Stand Alone

On-Farm

WRRF
RESULTS

- Location Data
- Response Rates
- Processing Capacity
- Food Processed
- Biogas Production
- Operational Dates
- Feedstock Types & Sources
- Biogas Uses
- Gas Cleaning Systems
- Solid & Liquid Digestate Uses

And more in the full report!

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RESULTS:
Operating AD Facilities Processing Food Waste by State

CT: 1  
DE: 0  
HI: 0  
MD: 0  
MA: 5  
NJ: 5  
RI: 0

Total

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### RESULTS:

- Total processing capacity (2018) = 21.1 million tons per year
- Total amount of food waste processed (2016) = 10.7 million tons
- Total amount of biogas produced (2016) = 40.3 thousand SCFM

<table>
<thead>
<tr>
<th>Digester type</th>
<th>Number of Facilities Surveyed</th>
<th>Submitted Survey</th>
<th>Response Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stand-alone digesters</td>
<td>62</td>
<td>46</td>
<td>74%</td>
</tr>
<tr>
<td>On-farm digesters</td>
<td>59</td>
<td>16</td>
<td>27%</td>
</tr>
<tr>
<td>WRRF digesters</td>
<td>77</td>
<td>72</td>
<td>94%</td>
</tr>
<tr>
<td>Total</td>
<td>198</td>
<td>134</td>
<td>68%</td>
</tr>
</tbody>
</table>
RESULTS: Operational Dates

The graph shows the number of digesters operational by year, categorized by On-Farm, Stand-Alone, and WRFF. The x-axis represents the years from 1958 to 2018, while the y-axis indicates the number of digesters.
**RESULTS: Top Five Feedstock Types Processed**

- **FOG Food processing industry waste**
- **Food processing industry waste**
- **Beverage processing industry waste**
- **Fruit/vegetative wastes**
- **Food service waste, pre- & post-consumer**

The chart illustrates the number of facilities reporting the use of these feedstock types across Stand-Alone Facilities, On-Farm Facilities, and WRFF Facilities.
RESULTS: Top Five Sources of Feedstock

- **Food/bev. Proc.**
  - Stand-Alone Facilities
  - On-Farm Facilities
  - WRRF Facilities

- **Rest. & food service**
  - Stand-Alone Facilities
  - On-Farm Facilities
  - WRRF Facilities

- **Groc. stores/superm.**
  - Stand-Alone Facilities
  - On-Farm Facilities
  - WRRF Facilities

- **Industrial**
  - Stand-Alone Facilities
  - On-Farm Facilities
  - WRRF Facilities

- **Munici./res.**
  - Stand-Alone Facilities
  - On-Farm Facilities
  - WRRF Facilities
RESULTS: Top Five Uses of Biogas

1. Produce heat and electricity (CHP)
   - Stand-Alone Digesters
   - On-Farm Digesters
   - Co-Digestion Systems at WRRFs

2. Fuel boilers and furnaces to heat digesters
   - Stand-Alone Digesters
   - On-Farm Digesters
   - Co-Digestion Systems at WRRFs

3. Fuel boilers and furnaces to heat other spaces
   - Stand-Alone Digesters
   - On-Farm Digesters
   - Co-Digestion Systems at WRRFs

4. Produce electricity (sold to grid)
   - Stand-Alone Digesters
   - On-Farm Digesters
   - Co-Digestion Systems at WRRFs

5. Produce electricity used behind the meter
   - Stand-Alone Digesters
   - On-Farm Digesters
   - Co-Digestion Systems at WRRFs
RESULTS: Top Five Uses of Solid Digestate

- De-watered and land applied
- Composted into a reusable/salable product
- Other
- Landfilled
- Land applied as is with no dewatering or drying

Number of facilities reporting use:

- Stand-Alone Digesters
- On-Farm Digesters
- WRFF Digesters
RESULTS: Uses of Liquid Digestate

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

Number of facilities reporting use

- Stand-Alone Digesters
- On-Farm Digesters
- WRRF Digesters
CONCLUSION & NEXT STEPS

• Report I and II have been released
  • Currently writing Report III
• Target release Summer/Fall 2020

https://www.epa.gov/anaerobic-digestion/anaerobic-digestion-tools-and-resources
U.S. EPA EXCESS FOOD OPPORTUNITIES MAP

Use the Map to support diversion of food from landfills.

Find more than one million potential generators (sources) of excess food, and more than 4,000 recipients (food banks, composters and anaerobic digesters) around the country and in your community.

Utilize the map’s tools, such as the ‘Near Me’ feature, basemap gallery, and bookmarks function, to make navigation simple and intuitive.

Find and download details about individual establishments, such as addresses and annual estimates of excess food generation, by using the map’s attribute table.

Or internet search: “epa food map”

Access the Map at: https://www.epa.gov/foodmap
Thank you!

Chris Carusiello
EPA Office of Resource Conservation & Recovery
Carusiello.Chris@epa.gov

Melissa Pennington
EPA Region III
Pennington.Melissa@epa.gov