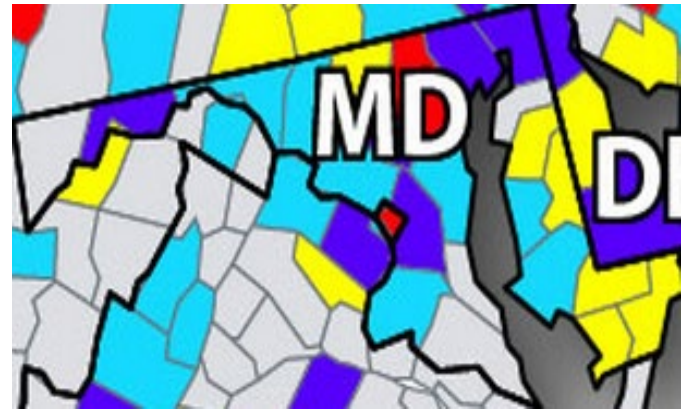




Biogas State Profile: Maryland



Biogas Potential

Maryland ranks #28 among U.S. states for methane production potential from biogas sources.¹

Currently Maryland has 25 operational biogas systems. We see the potential for more than 38 new biogas projects to be developed.

Constructing this many projects would generate \$114 million in capital investment, and create 950 short-term construction jobs, 76 long-term jobs, and numerous industry-supporting jobs.

If fully realized, these biogas systems could produce enough electricity to power 164,477 homes (1.9 billion kWh) or enough renewable natural gas to fuel 275,820 vehicles.

They would also collectively reduce greenhouse gas emissions by the equivalent of 9 Trillion tons of carbon dioxide, the same as growing 35 million tree seedlings for ten years or the amount 1,169,190 acres of U.S. American forest sequester each year.²

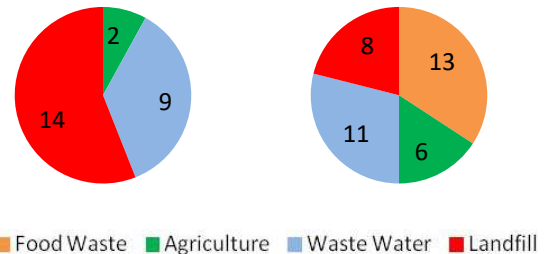
This analysis illustrates the methane generation potential by county from the following biogas sources: landfills; animal manure; wastewater treatment; and industrial, institutional, and commercial organic waste (IIC).

Thousand Tonnes/Year

- > 10
- 5 to 10
- 2.5 to 5
- 1 to 2.5
- < 1

| Energy | |
|--|---|
| Total CO2 Emissions ¹² | Ranks 33 rd in U.S., 1.14% share |
| Per Capita Energy Consumption ¹³ | Ranks 12 th in U.S. |
| Renewable Electricity Generation ¹⁴ | Ranks 34 th in U.S. |
| Energy Prices Rank ¹⁵ | Ranks 14 th in U.S. |

Operational Systems Potential Systems



Biogas Systems

Food Waste

| | |
|--|----|
| Operational food waste biogas systems ³ | - |
| Potential food waste biogas systems ⁴ | 13 |

Agriculture

| | |
|--|---|
| Operational biogas systems on farms ⁵ | 2 |
| Potential dairy farm biogas systems ⁶ | 6 |
| Potential swine farm biogas systems ⁷ | - |

Waste Water

| | |
|---|----|
| Operational biogas systems at water resource recovery facilities ⁸ | 9 |
| Potential biogas systems at WRRFS ⁹ | 11 |

Landfills

| | |
|--|----|
| Operational landfill gas systems ¹⁰ | 14 |
| Potential landfill gas systems ¹¹ | 8 |

Feedstocks

Manure

| | |
|------------------------------------|------------------------------|
| Total Manure Volume ¹⁶ | 44.6 million gallons per day |
| Total Dairy Manure ¹⁷ | 900 thousand gallons per day |
| Total Swine Manure ¹⁸ | 31,500 gallons per day |
| Total Broiler Manure ¹⁹ | 43.1 million gallons per day |
| Total Beef Manure ²⁰ | 451 thousand gallons per day |

Food Waste

| | |
|--|-----------------------|
| Total Food Waste Generated ²¹ | 657,360 tons per year |
|--|-----------------------|

Waste Water

| | |
|--|------------------------------|
| Average flow from WRRF's ²² | 30.2 million gallons per day |
|--|------------------------------|

* All citations are available on AmericanBiogasCouncil.org.

Maryland Green Policies

Maryland is active in both sustainability and waste diversion.

As part of its legislatively mandated Green House Gas Reduction Plan, the State has established long-term recycling and waste diversion goals of 80% and 85%, respectively.²³

Former Maryland Gov. Martin O'Malley issued an executive order affirming statewide waste reduction goals, directing state government to increase recycling, composting and waste diversion and limiting new or expanded landfills to help drive innovation and achieve those goals.²⁴

| | |
|---|---|
| State RPS ²⁵ | 20% by 2022, Includes AD |
| (RGGI) Green House Gas Bans ²⁶ | 25% Reduction of GHG Relative to 2006 Levels by 2020 |
| RGGI Statutes & Regulations | Maryland CO2 Budget Trading Program Rules |
| Maryland's Source Reduction Credit System ²⁷ | Maryland created a source reduction credit system, as an incentive for boosting waste diversion rates in 23 counties. |
| Waste Diversion Rate ²⁸ | Maryland State achieved a waste diversion rate of 48.9% in 2012. |
| Recycling Rate ²⁹ | In 2012, Maryland residents and businesses recycled 45.4% of the municipal solid waste. |
| Sustainability Commitments | EmPower Maryland ; EmPower Clean Energy Communities ; Smart, Green, & Growing ; Clean Bay Power ; Clean Cities Coalition |
| MD State Regulations | The MD Healthy Air Act of 2006 , The Greenhouse Gas Emissions Reduction Act of 2009 , Maryland Energy Efficiency Standards Act of 2007 , The Clean Energy Incentive Tax Credit of 2006 , Maryland State Permits Guide |
| Funding Opportunities | Clean Energy Production Tax Credit ; MEA EmPOWER Maryland Combined Heat & Power Grant Program |

Biogas Companies Located in MD

[BioEarthh Energy](#)

Capital Biogas LLC

[US Composting Council](#)

+ Dozens More

[Visit www.AmericanBiogasCouncil.org](http://www.AmericanBiogasCouncil.org) for the full Biogas Industry Directory

Maryland Biogas Resources

[Maryland Energy Administration](#)

MEA's programs and policies help lower energy bills, fuel the creation of green collar jobs, address environmental and climate impacts, and promote energy independence.

[Organics Material Exchange](#)

This site allows organics waste producers and users on the Central Coast to exchange materials.

[Maryland Recycling Network](#)

The Maryland Recycling Network (MRN) is an active group of professionals and the public who are passionate about building sustainable recycling programs. We see waste as a resource

[Maryland Recycles](#)

Find companies that will pick up recyclable material, and learn how to reduce your waste management costs and help the environment.

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²⁹<http://www.mde.state.md.us/programs/Marylander/Documents/Zero Waste Plan Draft 12.15.14.pdf>

- ¹ <http://www.nrel.gov/docs/fy14osti/60178.pdf>
- ² (See ABC Biogas Potential Calculator)
- ³ (See ABC Food Waste Digester Excel Spreadsheet)
- ⁴ (See ABC Biogas Potential Calculator)
- ⁵ <http://epa.gov/agstar/projects/index.html>
- ⁶ http://www.agcensus.usda.gov/Publications/2012/Full_Report/Volume_1,_Chapter_1_State_Level/Maryland/st24_1_017_019.pdf (Farms with 500 to 999 milk cows)
- ⁷ http://www.agcensus.usda.gov/Publications/2012/Full_Report/Volume_1,_Chapter_1_State_Level/Maryland/st24_1_020_023.pdf (Farms with 5,000 or more hogs)
- ⁸ <http://resourcerecoverydata.org/>
- ⁹ (See Above)
- ¹⁰ <http://www.epa.gov/lmop/projects-candidates/operational.html>
- ¹¹ <http://www.epa.gov/lmop/projects-candidates/candidates.html>
- ¹² <http://www.eia.gov/state/rankings/?sid=CA#series/226>
- ¹³ <http://www.eia.gov/state/?sid=CA#tabs-5>
- ¹⁴ (See Above)
- ¹⁵ <http://www.eia.gov/state/rankings/#/series/31>
- ¹⁶ (See EQIP State Matrix Livestock Inventory)
- ¹⁷ (See Above)
- ¹⁸ (See Above)
- ¹⁹ (See Above)
- ²⁰ (See Above)
- ²¹ (see ABC Biogas Potential Calculator)
- ²² <http://resourcerecoverydata.org/>
- ²³ http://climatechange.maryland.gov/site/assets/files/1392/mde_ggrp_report.pdf
- ²⁴ <http://news.maryland.gov/mde/2015/01/13/governor-omalley-issues-executive-order-to-drive-a-zero-waste-future-for-maryland/>
- ²⁵ <http://programs.dsireusa.org/system/program/detail/1085>
- ²⁶ http://www.mde.state.md.us/programs/Air/RGGI/Documents/www.mde.state.md.us/assets/document/air/RGGI_Facts.pdf
- ²⁷ [http://www.mde.state.md.us/assets/document/Source%20Reduction%20Credit%20Reporting%20System%20\(Overview\).pdf](http://www.mde.state.md.us/assets/document/Source%20Reduction%20Credit%20Reporting%20System%20(Overview).pdf)
- ²⁸ <http://www.mde.state.md.us/programs/Land/RecyclingandOperationsprogram/CountyCoordinatorResources/Documents/'13%20MSWMR.pdf>

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