



**AMERICAN  
BIOGAS  
COUNCIL**

# Biogas State Profile: Vermont

## Biogas Potential

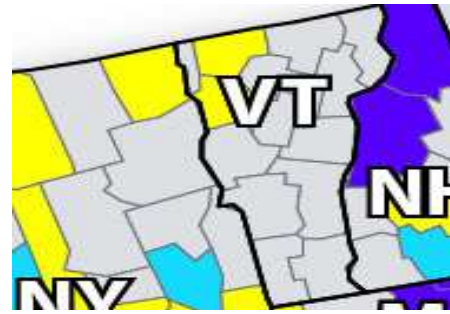
Vermont ranks #49 among U.S. states for methane production potential from biogas sources.<sup>1</sup>

Currently Vermont has 37 operational biogas systems. We see the potential for more than 55 new projects to be developed based on the estimated amount of available organic material.

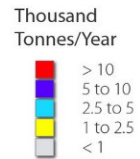
Constructing this many projects would generate \$165 million in capital investment, and create 1,375 short-term construction jobs, 110 long-term jobs, and numerous industry-supporting jobs.

If fully realized, these biogas systems could produce enough electricity to power 8,299 homes (107.3 million kWh) or enough renewable natural gas to fuel 15,585 vehicles.

They would also collectively reduce greenhouse gas emissions by the equivalent of 941 billion tons of carbon dioxide, the same as growing 1.9 million tree seedlings for ten years or the amount 64,415 acres of U.S. American forest sequester each year.<sup>2</sup>



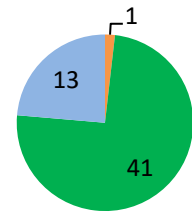
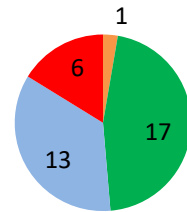
This analysis illustrates the methane generation potential by county from the following biogas sources: landfills; animal manure; wastewater treatment; and industrial, institutional, and commercial organic waste (IIC).



## U.S. Energy Rankings

Energy	
Total CO2 Emissions <sup>12</sup>	Ranks Last in U.S., .001% share
Per Capita Energy Consumption <sup>13</sup>	Ranks 45 <sup>th</sup> in U.S.
Renewable Electricity Generation <sup>14</sup>	Ranks 39 <sup>th</sup> in U.S.
Energy Prices Rank <sup>15</sup>	Ranks 9 <sup>th</sup> in U.S.

## Operational Systems    Potential Systems



■ Food Waste   ■ Agriculture   ■ Waste Water   ■ Landfill

## Biogas Systems

### Food Waste

Operational food waste biogas systems <sup>3</sup>	1
Potential food waste biogas systems <sup>4</sup>	1

### Agriculture

Operational biogas systems on farms <sup>5</sup>	17
Potential dairy farm biogas systems <sup>6</sup>	41
Potential swine farm biogas systems <sup>7</sup>	-

### Waste Water

Operational biogas systems at water resource recovery facilities <sup>8</sup>	13
Potential biogas systems at WRRFS <sup>9</sup>	13

### Landfills

Operational landfill gas systems <sup>10</sup>	6
Potential landfill gas systems <sup>11</sup>	-

## Feedstocks

### Manure

Total Manure Volume <sup>16</sup>	2.5 million gallons per day
Total Dairy Manure <sup>17</sup>	2.3 million gallons per day
Total Swine Manure <sup>18</sup>	5,250 gallons per day
Total Beef Manure <sup>19</sup>	132 thousand gallons per day

### Food Waste

Total Food Waste Generated <sup>20</sup>	60 thousand tons per year
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### Waste Water

Average flow from WRRF's <sup>21</sup>	1.8 million gallons per day
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\* All citations are available on [AmericanBiogasCouncil.org](http://AmericanBiogasCouncil.org).

## Vermont Green Policies

**Renewable energy standard:** Senate Bill 51 titled "An act relating to establishing a renewable energy standard and energy transformation program." Its purpose is to repeal the 9 Sustainably Priced Energy Enterprise Development Program, effective July 1, 10 2015. It also proposes, for effect in 2017, to create a Renewable Energy 11 Standard and Energy Transformation (RESET) Program for electric utilities.<sup>22</sup>

RPS <sup>23</sup>	55% renewable by 2017, increasing by an additional 4% every 3 years until reaching 75% by 2032.
Statutes & Regulations	<a href="#">Vermont Air Pollution and Regulation</a> <a href="#">Net Metering</a> <a href="#">Interconnection Standard</a> <a href="#">Building Energy Standards</a>
Sustainable Commitments	<a href="#">Energy Reduction Goals</a>
State Funding Opportunities	<a href="#">Renewable Energy System Sales Exemption</a> <a href="#">GMP Cow Power</a> <a href="#">Clean Energy Development Fund</a> <a href="#">Efficiency Vermont</a> <a href="#">Investment Tax Credit</a> <a href="#">Small Business Energy Loan Program</a> <a href="#">Commercial Energy Loan Program</a> <a href="#">Agricultural Energy Loan Program</a> <a href="#">Energy Loan Guarantee Program</a> <a href="#">Standard Offer Program</a>

## Biogas Companies Located in VT

[Ag Methane Producers](#)

[Beam Engineering](#)

+ Dozens More

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

### Vermont Biogas Resources:

#### [Renewable Energy Atlas of Vermont](#)

The Renewable Energy Atlas of Vermont offers mapping and analyzing of existing and potential renewable energy sites in state.

#### [Vermont Environmental Consortium](#)

The Vermont Environmental Consortium is to be the go-to organization for the environmental business sector in Vermont. VEC's mission is to promote growth and job creation in Vermont's environmental business sector.

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- 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/Vermont/st50\\_1\\_017\\_019.pdf](http://www.agcensus.usda.gov/Publications/2012/Full_Report/Volume_1,_Chapter_1_State_Level/Vermont/st50_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/Vermont/st50\\_1\\_020\\_023.pdf](http://www.agcensus.usda.gov/Publications/2012/Full_Report/Volume_1,_Chapter_1_State_Level/Vermont/st50_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 <http://archive.constantcontact.com/fs142/1105757924138/archive/1117111138365.html>
  - 21 <http://resourcerecoverydata.org/>
  - 22 <https://legiscan.com/VT/bill/S0051/2015>
  - 23 <http://programs.dsireusa.org/system/program/detail/578>

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