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<td>2) Southeast Resource Recovery Facility (Long Beach)</td>
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<td>California</td>
<td>4) Bristol Resource Recovery Facility (Bristol)</td>
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<td>5) CRRA Hartford Trash-to-Energy Plant (Hartford)</td>
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<td>6) Southeaster Connecticut Resource Recovery Facility (Preston)</td>
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<td>7) Wheelabrator Bridgeport, L.P. (Bridgeport)</td>
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<td>8) Wheelabrator Lisbon Inc. (Lisbon)</td>
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<tr>
<td>Connecticut</td>
<td>9) Bay County Waste-to-Energy Facility (Panama City)</td>
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<td>10) Hillsborough County Resource Recovery Facility (Tampa)</td>
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<td>11) Lake County Resource Recovery Facility (Okahumpka)</td>
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<td>12) Lee County Resource Recovery Facility (Fl. Myers)</td>
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<td>13) McKay Bay Refuse-to-Energy Facility (Tampa)</td>
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<td>14) Miami-Dade County Resource Recovery Facility (Miami)</td>
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<td>15) Palm Beach Renewable Energy Facility #1 (West Palm Beach)</td>
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<td>16) Palm Beach Renewable Energy Facility #2 (West Palm Beach)</td>
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<td>17) Pasco County Solid Waste Resource Recovery Facility (Spring Hill)</td>
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<td>18) Pinellas County Resource Recovery Facility (St. Petersburg)</td>
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<td>19) Wheelabrator South Broward Inc. (Ft. Lauderdale)</td>
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<td>25) Penobscot Energy Recovery Company (Orrington)</td>
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<td>35) Detroit Renewable Power (Detroit)</td>
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<td>37) Great River Energy - Elk River Station (Elk River)</td>
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<td>40) Perham Resource Recovery Facility (Perham)</td>
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<td>45) Wheelabrator Concord Company, L.P. (Concord)</td>
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<td>New Jersey</td>
<td>46) Covanta Camden Energy Recovery Center (Camden)</td>
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<td>48) Essex County Resource Recovery Facility (Newark)</td>
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<td>49) Union County Resource Recovery Facility (Rahway)</td>
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<td>66) Susquehanna Resource Management Complex (Harrisburg)</td>
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<td>67) Wheelabrator Falls Inc. (Morristville)</td>
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<td>68) York County Resource Recovery Center (York)</td>
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<td>Virginia</td>
<td>69) Alexandria/Arlington Resource Recovery Facility (Alexandria)</td>
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<td>71) I-95 Energy/Resource Recovery Facility (Lorton)</td>
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<td>75) Xcel Energy French Island Generating Station (LaCrosse)</td>
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WASTE-TO-ENERGY CAPACITY

Total Capacity U.S Facilities (by energy)

Daily Throughput

94,243 TONS /DAY

Gross Electric Capacity

2,534 MW

Equivalent CHP Capacity

2,725 MW

No. of Operating Facilities in the U.S.

Operating Facilities

75

States with WTE

21

Ownership

Private 41

Public 34

Operation

Private 65

Public 10

No. of Facilities (by technology)

Mass Burn

58

Refuse Derived Fuel (RDF)

13

Modular

4

No. of Facilities (by offtake)

Electricity Generation

58

Steam Export

3

Combined Heat & Power

14
WTE facilities are extremely stable and reliable

Total Production by U.S WTE Facilities

2017 MSW Throughput

29,276,060 TONS

2017 Electric Generation

13,876,446 MWH

WTE facilities operate reliably and steadily, which is a testament to the success of the technology. While some units eventually close, and some new units have been added, waste-to-energy facilities have a proven track record of operational availability and reliability. Challenging market conditions in the energy and waste markets have served as an impediment to constructing more facilities and recovering energy from more of the 250 million tons of post-recycled waste that is sent to landfills each year.
# WTE REDUCES GREENHOUSE GAS EMISSIONS

## An Internationally-Recognized Source of GHG Emissions Mitigation

Numerous international governments, NGOs, and researches recognize the climate benefits of WTE, including the U.S. EPA,\(^1\) U.S. EPA scientists,\(^2\) the Intergovernmental Panel on Climate Change ("IPCC"),\(^3\) the World Economic Forum,\(^4\) the European Union,\(^5\) CalRecycle,\(^6\) and the Center for American Progress.\(^7\) Third Way,\(^8\) and other researchers. WTE facilities generate carbon offsets credits under both the Clean Development Mechanism (CDM) of the Kyoto Protocol and voluntary carbon offset markets: Under CDM, more than 40 WTE projects have been registered, with a combined annual GHG reduction of 5 million metric tons of CO\(_2\)e per year. To date, three WTE expansions have been validated as carbon offset projects in North America. The Lee and Hillsborough County facilities, operated on behalf of municipal owners in Florida, have been selling carbon credits into the voluntary market for several years.

**WTE contributes to GHGs reductions in three ways:**
- it generates energy that otherwise would likely be generated by fossil-fueled facilities;
- it diverts solid waste from landfills where it would have emitted methane for generations; and
- it recovers metals for recycling, thereby saving the GHGs and energy associated with the production of products and materials from virgin inputs.

On average, the U.S. EPA has determined that WTE facilities reduce GHG emissions by one ton of CO\(_2\) equivalents (CO\(_2\)e) for every ton of MSW diverted from landfill and processed.

---

\(^1\) EPA Clean Power Plan, 40 CFR 60 Subpart UUUU


Waste-to-energy (WTE) meets the two basic criteria for establishing what a renewable energy resource is—its fuel source (trash) is sustainable and indigenous. Waste-to-energy facilities recover valuable energy from trash after efforts to “reduce, reuse, and recycle” have been implemented by households and local governments. Waste-to-energy facilities generate clean renewable energy and deserve the same treatment as any other renewable energy resource.

- **Trash Would Otherwise go to a Landfill.** Waste-to-energy facilities use no fuel sources other than the waste that would otherwise be sent to landfills.

- **State Renewable Statutes Already Include WTE.** 31 states, the District of Columbia, and two territories have defined waste-to-energy as renewable energy in various state statutes and regulations, including renewable portfolio standards.

- **Communities with WTE Have Higher Recycling Rates.** Studies have demonstrated that average recycling rate of communities served by waste-to-energy is higher than the national average.

- **WTE Has a Long History as Renewable.** Waste-to-energy has been recognized as renewable by the federal government for nearly thirty years under a variety of statutes, regulations, and policies. Many state have recognized as renewable under state statutes as well. The renewable status has enabled waste-to-energy plants to sell credits in renewable energy trading markets, as well as to the federal government through competitive bidding processes.

- **Renewable Designations Benefit Many Local Governments and Residents.** The sale of renewable energy credits creates revenue for local governments that own waste-to-energy facilities, helping to reduce a community’s cost of processing waste. The U.S. Conference of Mayors has adopted several resolutions supporting waste-to-energy as a renewable resource.
Waste-to-energy facilities are subject to standards that are among the most stringent in the world. Under the Clean Air Act, more than $1 billion was invested in upgrades to air quality control systems at America’s waste-to-energy facilities. The results were so dramatic that the U.S. Environmental Protection Agency wrote that the “upgrading of the emissions control systems of large combustors to exceed the requirements of the Clean Air Act Section 129 standards is an impressive accomplishment.”

In addition to combustion controls, waste-to-energy facilities employ sophisticated air quality control equipment, such as selective non-catalytic reduction” or “SNCR”, scrubbers, activated carbon injection, and fabric filter baghouses.

As a result of the controls employed at these plants, dramatic reductions in emissions have been achieved, leading EPA to conclude that the emissions performance of waste-to-energy “has been outstanding.” (Stevenson, EPA, 2007)

Columbia University Conducts Research on the Modern Day Dioxin Emissions

In 2006, the U.S. EPA published an inventory of dioxin emissions for the U.S. covering the period from 1987–2000. A peer-reviewed paper by Dwyer and Themelis* provides an updated inventory of all U.S. dioxin emissions to the atmosphere in the year 2012. The sources of emissions of “dioxins” were separated into two classes: controlled industrial and open burning sources. The 2012 dioxin emissions from 53 U.S. waste-to-energy (WTE) power plants were compiled on the basis of detailed data obtained from the two major U.S. WTE companies, representing 84% of the total MSW combusted (27.4 million metric tons).

The dioxin emissions of all U.S. WTE plants in 2012 were 3.4 g TEQ and represented 0.54% of the controlled industrial dioxin emissions, and 0.09% of all dioxin emissions from controlled and open burning sources.

* Dwyer, H., Themelis, N.J. Inventory of U.S. 2012 dioxin emissions to atmosphere. Waste Management (2015), http://dx.doi.org/10.1016/j.wasman.2015.08.009

<table>
<thead>
<tr>
<th>POLLUTANT</th>
<th>1990 EMISSIONS (TPY)</th>
<th>2005 EMISSIONS (TPY)</th>
<th>PERCENT REDUCTION</th>
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<tr>
<td>CDD/CDF, TEQ BASIS*</td>
<td>4,400</td>
<td>15</td>
<td>-99.7%</td>
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<tr>
<td>MERCURY</td>
<td>57</td>
<td>2</td>
<td>-96.0%</td>
</tr>
<tr>
<td>CADMIUM</td>
<td>10</td>
<td>0.4</td>
<td>-95.8%</td>
</tr>
<tr>
<td>LEAD</td>
<td>170</td>
<td>6</td>
<td>-96.8%</td>
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<tr>
<td>PARTICULATE MATTER</td>
<td>18,600</td>
<td>780</td>
<td>-95.8%</td>
</tr>
<tr>
<td>HCl</td>
<td>57,400</td>
<td>3,200</td>
<td>-94.4%</td>
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<tr>
<td>SO₂</td>
<td>38,300</td>
<td>4,600</td>
<td>-88.0%</td>
</tr>
<tr>
<td>NOₓ</td>
<td>64,900</td>
<td>49,500</td>
<td>-23.7%</td>
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In a 2013 study, Eileen Berenyi found that the WTE sector creates $5.6 billion of gross economic sales output and supports nearly 14,000 jobs with $890 million of total labor compensation.

The WTE sector serves three main functions: 1) managing post-recycled waste; 2) recycling post-consumer metals; and 3) producing energy. The revenues, employment, and labor earnings derived from these activities are the direct economic benefits of waste-to-energy. In addition, these activities generate indirect impacts as well as induced impacts. These impacts were calculated using multipliers from the U.S. Bureau of Economic Analysis RIMS II Handbook.

Every $1 of revenue generated by the WTE sector injects $1.77 into the economy (through intermediate purchases of goods and services and payments to employees)

Total Gross Sales Output

Total gross sales numbers were used to approximate the economic output of the sector. Gross sales of the industry encompass revenues generated from: 1) tip fees—amounts paid to the WTE plant to dispose of refuse; 2) energy sales revenues; 3) recycling sales revenues. Total output (sales revenues) was $3.2 billion. The total national economic impact of these revenues is $5.6 billion, including the initial $3.2 billion produced by the waste-to-energy sector directly.

Employment and Wage Earnings

According to Berenyi’s report, the WTE sector employs about 5,350 people nationwide. This number includes workers at specific sites, as well as off-site employees of the several regional and national firms that own and operate waste-to-energy facilities and local government personnel dedicated to plant oversight and maintenance. The WTE sector also creates an additional 8,600 jobs outside of the sector.

Employees at waste-to-energy plants are technically skilled and are compensated at a relatively high average wage. For the purposes of this study a national average salary of $85,700 (inclusive of fringe benefits) was used. Employees in the waste-to-energy industry receive about $460 million in annual salary and benefits. The effect of this direct spending on employee compensation generated another $429 million of compensation for workers across various associated industries.

Conclusion

The waste-to-energy sector provides significant economic value to the communities it services. In addition to the revenues generated by the sector, waste-to-energy facilities provide stable, long-term, well-paying jobs, while pumping dollars into local economies through the purchase of local goods and services and the payment of fees and taxes. In addition to the opportunities to provide base-load renewable electric generation, recover metals for recycling, and reduce greenhouse gas emissions, these facilities significantly contribute to the green economy in the communities in which they operate.

Access the full report here:
http://energyrecoverycouncil.org/resources
In 2014, Eileen Brettler Berenyi, Ph.D. published a report entitled *A Compatibility Study: Recycling and Waste-to-Energy work in Concert, 2014 Update* in which she answered the following question: Does a community’s use of a waste-to-energy plant to dispose of its waste impact the level of recycling in that community? Through significant research and analysis, the answer is a resounding no. This report can be found at: http://energyrecoverycouncil.org/resources.

Berenyi found that the recycling rate of communities served by WTE facilities was slightly higher than the state average in 16 out of 21 states utilizing WTE.

Berenyi also found that state solid waste policies, not a community’s reliance on WTE for disposal, determines local recycling behavior and rates.
The Circular Economy is a business model focused on maximizing and leveraging the value of all materials and resources throughout their production/service cycles. Resource management in a circular economy entails reuse, refurbishment, remanufacturing, and recovery. Energy recovery's place in the Circular Economy is obvious when one considers that 1 billion tons of trash are being buried each year globally. In particular, energy recovery is important when materials are not easily recyclable (i.e. soiled or contaminated materials, composite materials) or for low-value materials, including those that are cost/time-intensive to collect, handle and recover.

Synergies between WTE and the Circular Economy

The countries with the highest degree of material recovery are also often also those with highest degree of energy recovery. Energy and material recovery of non-recyclable waste avoids landfill emissions with potent climate change impacts.

The EU's Circular Economy Package is the most active Circular Economy policy.

European Commission Recognizes WTE's potential to advance the Circular Economy

Untapped Potential for Waste-derived fuels
- The Joint Research Centre of the Commission identified 20 under-utilized waste-derived fuels

Improve Efficiency of existing WTE processes
- Use new technology and operational standards to improve processes (incineration, gasification, etc.)

Develop synergies with WTE and energy-intensive industries
- Use some forms of industrial and C&D waste treated by WTE to boost waste volumes for energy recovery

EU CE Package Goals

(EU-wide initiative to achieve the following goals by 2030)

- Recycle 65% of all municipal waste
- Recycle 75% of all packaging waste
- Send no more than 10% of waste to landfill
The "ladder" of sustainable waste management in the U.S.

SUSTAINABLE WASTE MANAGEMENT IN THE WORLD

Source: Global WTERT Council
City: The city in which the facility is physically located.

County: The county in which the facility is physically located.

U.S. Congressional District: The U.S. congressional district in which the facility is physically located in the 115th Congress (2017-2018).

Owner: The current owner of the facility is listed. Whether the owner is a private or public entity is noted parenthetically.

Operator: The current operator of the facility is listed. Whether the operator is a private or public entity is noted parenthetically.

Project Startup: The actual year in which commercial operation began.

Operating Status: Indicates whether the facility is operating, inactive, or under construction in 2018.

Technology: Indicates whether the facility is mass burn, modular, or refuse derived fuel (RDF).

Throughput Capacity (TPD): Expressed in tons per day, the throughput capacity is the aggregate trash capacity for all units located at a facility.

No. of Boilers: The number of boilers (or units) in use at the facility.

Gross Electric Capacity (MW): Expressed in gross megawatts, the nameplate capacity of the turbine generators located at the facility. This figure represents the largest amount of gross electrical output that can be achieved.

Gross Steam Capacity (lbs/hr): The gross amount of steam that can be generated. For combined heat and power facilities, this amount represents the typical amount of steam exported expressed in pounds per hour, in addition to electric generation.

Full-time Employees: The approximate number of full-time employees that work at a facility. This number is an estimate and fluctuates over time.

People Served: Indicates the number of individuals that are served by the facility in the "waste catchment area".

Certifications: Indicates whether the facility has achieved STAR status under the U.S. Occupational Safety and Health Administration (OSHA) Voluntary Protection Program (VPP) or is ISO certified.

State Based Information

WTE Facilities: The number of facilities located in that state.

Total Waste Capacity: The aggregate trash capacity of all facilities located in that state.

Total Electric Capacity: The aggregate gross electric capacity of all facilities located in that state.

Total Steam Capacity: The aggregate gross steam capacity typically exported (expressed in lbs/hr) of all facilities located in that state.

MSW Breakdown: The total amount of MSW processed at all facilities in the state in 2011, as reported by the 2013 Columbia University EEC Survey.

Jobs at WTE Facilities: The aggregate FTE jobs at facilities in the state listed in the directory.

Total Jobs (Direct, Indirect, & Induced) Created by WTE: The total number of direct, indirect, and induced jobs created by WTE in the state, as reported by Eileen Berenyi in the 2013 National WTE Economic report.

Total Economic Output (Direct, Indirect & Induced) by WTE: The total number of direct, indirect and induced economic output created by WTE in the state, as reported by Eileen Berenyi in the 2013 National WTE Economic report.
Huntsville Waste-to-Energy Facility

Huntsville, AL // Madison County
5th US Congressional District

Owner: Solid Waste Disposal Authority of Huntsville (public)
Operator: Covanta Huntsville, Inc. (private)

Started: 1990
Technology: Mass Burn
Capacity (MSW): 690 tons per day
Boilers: 2
Steam Capacity: 178,620 lbs/hr
People Served: 277,000
Certifications: VPP STAR

Address: 5251 Triana Blvd, Huntsville, AL 35805
Website: www.swdahsv.org | www.covanta.com

WTE Capacity

<table>
<thead>
<tr>
<th>TONS /DAY</th>
<th>STEAM CAPACITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>690</td>
<td>178,620 LBS/HR</td>
</tr>
</tbody>
</table>

MSW Breakdown

- Landfill: 95%
- Recycling/Composting: 3%
- Waste-to-Energy: 2%

JOBS

- 38 JOBS IN WTE FACILITIES
- 109 TOTAL JOBS

TOTAL ECONOMIC OUTPUT

- $47.1 MILLION
California

Waste-To-Energy State Stats — 2 Facilities

<table>
<thead>
<tr>
<th>WTE Capacity</th>
<th>MSW Breakdown</th>
<th>JOBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,180 TONS /DAY WASTE CAPACITY</td>
<td>45%</td>
<td>$139.8 MILLION TOTAL ECONOMIC OUTPUT</td>
</tr>
<tr>
<td>58.4 MW ELECTRICITY CAPACITY</td>
<td>54%</td>
<td>146 JOBS IN WTE FACILITIES</td>
</tr>
<tr>
<td>1%</td>
<td>2%</td>
<td>503 TOTAL JOBS</td>
</tr>
</tbody>
</table>

Southeast Resource Recovery Facility (SERRF)

Long Beach, CA // Los Angeles County
47th US Congressional District
Owner: Southeast Resource Recovery Facility (public)
Operator: Covanta Long Beach Renewable Energy Corp. (private)

Started: 1988
Technology: Mass Burn
Capacity (MSW): 1,380 tons per day
Boilers: 3
Elec. Capacity: 36 MW
People Served: 500,000

118 Pier S. Ave, Long Beach, CA 90802
www.lacsd.org/solidwaste | www.covanta.com

Stanislaus County Resource Recovery Facility

Crows Landing, CA // Stanislaus County
10th US Congressional District
Owner: Covanta Stanislaus, Inc. (private)
Operator: Covanta Stanislaus, Inc. (private)

Started: 1989
Technology: Mass Burn
Capacity (MSW): 800 tons per day
Boilers: 2
Elec. Capacity: 22.4 MW
People Served: 521,497

4040 Fink Road, Crows Landing, CA 95313
www.stancountywte.com | www.covanta.com
# CONNECTICUT

## Waste-To-Energy State Stats — 5 Facilities

<table>
<thead>
<tr>
<th>WTE Capacity</th>
<th>MSW Breakdown</th>
<th>JOBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>6,939 TONS /DAY</td>
<td>69% WTE</td>
<td>$384 MILLION TOTAL ECONOMIC OUTPUT</td>
</tr>
<tr>
<td>184.3 MW</td>
<td>ELECTRICITY CAPACITY</td>
<td>323 JOBS IN WTE FACILITIES</td>
</tr>
<tr>
<td>WASTE CAPACITY</td>
<td>69%</td>
<td>950 TOTAL JOBS</td>
</tr>
<tr>
<td>Recycl/Composting</td>
<td>2%</td>
<td></td>
</tr>
<tr>
<td>Landfill</td>
<td>8%</td>
<td></td>
</tr>
<tr>
<td>Waste-to-Energy</td>
<td>0%</td>
<td></td>
</tr>
</tbody>
</table>

### Bristol Resource Recovery Facility

**Bristol, CT // Hartford County**  
1st US Congressional District  
Owner: Covanta Bristol, Inc. (private)  
Operator: Covanta Bristol, Inc. (private)

- **Started:** 1988  
- **Technology:** Mass Burn  
- **Capacity (MSW):** 650 tons per day  
- **Boilers:** 2  
- **Elec. Capacity:** 16.3 MW  
- **People Served:** 373,150

170 Enterprise Drive, Bristol, CT 06010  
www.brrfc.org | www.covanta.com

### Mid-Connecticut Resource Recovery Facility

**Hartford, CT // Hartford County**  
1st US Congressional District  
Owner: Materials Innovation and Recycling Authority (public)  
Operator: NAES Corp. (private)

- **Started:** 1988  
- **Technology:** RDF  
- **Capacity (MSW):** 2,850 tons per day  
- **Boilers:** 3  
- **Capacity:** 69 MW  
- **People Served:** 1,208,813

1 Reserve Road, Hartford, CT 06114  
www.ctmira.org | www.naes.com
CONNECTIONT

Southeastern Connecticut Resource Recovery Facility

Preston, CT // New London County
2nd US Congressional District
Owner: Covanta Company Southeastern CT (private)
Operator: Covanta Company Southeastern CT (private)

- **Started:** 1991
- **Technology:** Mass Burn
- **Capacity (MSW):** 669 tons per day
- **Boilers:** 2
- **Elec. Capacity:** 17 MW
- **People Served:** 248,233

Wheelabrator Bridgeport

Bridgeport, CT // Fairfield County
4th US Congressional District
Owner: Wheelabrator Bridgeport, L.P. (private)
Operated by: Wheelabrator Bridgeport, L.P. (private)

- **Started:** 1988
- **Technology:** Mass Burn
- **Capacity (MSW):** 2,250 tons per day
- **Boilers:** 3
- **Elec. Capacity:** 67 MW
- **People Served:** 815,807

Wheelabrator Lisbon

Lisbon, CT // New London County
2nd US Congressional District
Owner: Eastern CT Resource Recovery Authority (public)
Operator: Wheelabrator Lisbon Inc. (private)

- **Started:** 1995
- **Technology:** Mass Burn
- **Capacity (MSW):** 500 tons per day
- **Boilers:** 2
- **Elec. Capacity:** 15 MW
- **People Served:** 225,000

132 Military Highway, Preston CT 06365
www.covanta.com

6 Howard Avenue, Bridgeport, CT 06605
www.wtienergy.com

425 South Burnham Highway, Lisbon, CT
www.wtienergy.com / www.ecrra.org
FLORIDA

Waste-To-Energy State Stats — 11 Facilities

<table>
<thead>
<tr>
<th>WTE Capacity</th>
<th>MSW Breakdown</th>
<th>JOBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>20,114 TONS/DAY</td>
<td>21% WTE</td>
<td>$997.5 MILLION TOTAL ECONOMIC OUTPUT</td>
</tr>
<tr>
<td>560 MW</td>
<td>27%</td>
<td>819 JOBS IN WTE FACILITIES</td>
</tr>
<tr>
<td>WASTE CAPACITY</td>
<td>51%</td>
<td>2,371 TOTAL JOBS</td>
</tr>
<tr>
<td>ELECTRICITY CAPACITY</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Bay County Waste Facility

Panama City, FL // Bay County
2nd US Congressional District
Owner: Bay County (public)
Operator: Engen LLC. (private)

- **Started:** 1987
- **Technology:** Mass Burn
- **Capacity (MSW):** 500 tons per day
- **Boilers:** 2
- **Elec. Capacity:** 15 MW
- **People Served:** 169,560
- **Certifications:** ISO 14001

6510 Bayline Drive, Panama City, FL 32404
www.engenllc.com

Hillsborough County Resource Recovery Facility

Tampa, FL // Hillsborough County
14th US Congressional District
Owner: Hillsborough County (public)
Operator: Covanta Hillsborough, Inc. (private)

- **Started:** 1987 (units 1-3); 2009 (unit 4)
- **Technology:** Mass Burn
- **Capacity (MSW):** 1,800 tons per day
- **Boilers:** 4
- **Elec. Capacity:** 46.5 MW
- **People Served:** 1,234,010

350 N Falkenburg Rd, Tampa, FL 33619
www.covanta.com
FLORIDA

Lake County Resource Recovery Facility

Okahumpka, FL // Lake County
10th US Congressional District
Owner: Covanta Lake, Inc. (private)
Operator: Covanta Lake, Inc. (private)

Started: 1991
Technology: Mass Burn
Capacity (MSW): 528 tons per day
Boilers: 2
Elec. Capacity: 14.5 MW
People Served: 288,379,233

Lee County Resource Recovery Facility

Ft. Myers, FL // Lee County
19th US Congressional District
Owner: Lee County (public)
Operator: Covanta Lee, Inc. (private)

Started: 1994 (units 1-2) ; 2007 (unit 3)
Technology: Mass Burn
Capacity (MSW): 1,836 tons per day
Boilers: 3
Elec. Capacity: 57.3 MW
People Served: 626,502

McKay Bay Refuse-to-Energy Facility

Tampa, FL // Hillsborough County
14th US Congressional District
Owner: City of Tampa (public)
Operator: Wheelabrator McKay Bay Inc. (private)

Started: 1985
Technology: Mass Burn
Capacity (MSW): 1,000 tons per day
Boilers: 4
Elec. Capacity: 22 MW
People Served: 336,823

3830 Rogers Industrial Park Rd. Okahumpka, FL 34762
www.covanta.com

10500 Buckingham Rd., Ft. Myers, FL 33905
www.lee.gov/solidwaste | www.covanta.com

107 North 34th St., Tampa, FL 33605
www.wtienergy.com | www.tampagov.net/solid-waste/info/mckay-bay/
Miami-Dade County Resource Recovery Facility

Miami, FL // Miami-Dade County
25th US Congressional District
Owner: Miami-Dade County (public)
Operator: Covanta Dade Renewable Energy, LLC (private)

- Started: 1982
- Technology: RDF
- Capacity (MSW): 3,000 tons per day
- Boilers: 4
- Elec. Capacity: 77 MW
- People Served: 2,531,789

Palm Beach Renewable Energy Facility 1

West Palm Beach, FL // Palm Beach County
18th US Congressional District
Owner: Solid Waste Authority of Palm Beach County (public)
Operator: Covanta Energy (private)

- Started: 1989
- Technology: RDF
- Capacity (MSW): 2,000 tons per day
- Boilers: 2
- Elec. Capacity: 61 MW
- People Served: 1,270,000

Palm Beach Renewable Energy Facility 2

West Palm Beach, FL // Palm Beach County
18th US Congressional District
Owner: Solid Waste Authority of Palm Beach County (public)
Operator: Covanta Energy (private)

- Started: 2015
- Technology: Mass Burn
- Capacity (MSW): 3,000 tons per day
- Boilers: 3
- Elec. Capacity: 96 MW
- People Served: 1,270,000
Spring Hill, FL // Pasco County
12th US Congressional District

Owner: Pasco County (public)
Operated by: Covanta Pasco, Inc. (private)

Started: 1991
Technology: Mass Burn
Capacity (MSW): 1,050 tons per day
Boilers: 3
Elec. Capacity: 29.7 MW
People Served: 439,702

Pinellas County Resource Recovery Facility

St. Petersburg, FL // Pinellas County
13th US Congressional District

Owner: Pinellas County (public)
Operator: Covanta Pinellas, Inc. (private)

Started: 1983
Technology: Mass Burn
Capacity (MSW): 3,150 tons per day
Boilers: 3
Elec. Capacity: 75 MW
People Served: 1,000,000

Wheelabrator South Broward Inc.

Ft. Lauderdale, FL // Broward County
23rd US Congressional District

Owner: Wheelabrator South Broward Inc. (private)
Operator: Wheelabrator South Broward Inc. (private)

Started: 1991
Technology: Mass Burn
Capacity (MSW): 2,250 tons per day
Boilers: 3
Elec. Capacity: 66 MW
People Served: 850,000
Waste-To-Energy State Stats — 1 Facility

<table>
<thead>
<tr>
<th>WTE Capacity</th>
<th>MSW Breakdown</th>
<th>JOBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,000 TONS /DAY</td>
<td>14% WTE</td>
<td>$143.4 MILLION TOTAL ECONOMIC OUTPUT</td>
</tr>
<tr>
<td>90 MW</td>
<td>Electricity Capacity</td>
<td>161 JOBS IN WTE FACILITIES</td>
</tr>
</tbody>
</table>

Honolulu Resource Recovery Venture—HPOWER

Kapolei, HI // Honolulu County
1st US Congressional District
Owner: City & County of Honolulu (public)
Operator: Covanta Honolulu Resource Recovery Venture (private)
Started: 1990 (units 1-2); 2012 (unit 3)
Technology: RDF (units 1-2); Mass Burn (unit 3)
Capacity (MSW): 3000 tons per day
Boilers: 3
Elec. Capacity: 90 MW
People Served: 907,574

91-174 Hanua Street, Kapolei, HI 96707
www.covanta.com | www.opala.org
INDIANA

Waste-To-Energy State Stats — 1 Facility

<table>
<thead>
<tr>
<th>WTE Capacity</th>
<th>MSW Breakdown</th>
<th>JOBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,362 TONS/DAY</td>
<td>11% WTE</td>
<td>$74.9 MILLION</td>
</tr>
<tr>
<td>558,000 LBS/HR</td>
<td>13% LandFill</td>
<td></td>
</tr>
<tr>
<td>6.5 MW</td>
<td>76% Recycling/Composting</td>
<td></td>
</tr>
<tr>
<td>ELECTRICITY CAPACITY</td>
<td>11% Waste-to-Energy</td>
<td>TOTAL ECONOMIC OUTPUT</td>
</tr>
<tr>
<td>JOBS</td>
<td>74 JOBS IN WTE FACILITIES</td>
<td></td>
</tr>
<tr>
<td></td>
<td>197 TOTAL JOBS</td>
<td></td>
</tr>
</tbody>
</table>

Indianapolis Resource Recovery Facility

Indianapolis, IN // Marion County
7th US Congressional District

Owner: Covanta Indianapolis, Inc. (private)
Operator: Covanta Indianapolis, Inc. (private)

Started: 1988
Technology: Mass Burn
Capacity (MSW): 2,362 tons per day
Boilers: 3
Steam Capacity: 558,000 lbs/hr
Elec. Capacity: 6.5 MW
People Served: 907,574

2320 South Harding Street, Indianapolis, IN 46221
www.covanta.com
### Waste-To-Energy State Stats – 1 Facility

<table>
<thead>
<tr>
<th>WTE Capacity</th>
<th>MSW Breakdown</th>
<th>JOBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>175 TONS/DAY</td>
<td>1% WTE</td>
<td>$7.3 MILLION</td>
</tr>
<tr>
<td>4 MW</td>
<td>69% Recycling/Composting</td>
<td>TOTAL ECONOMIC OUTPUT</td>
</tr>
<tr>
<td></td>
<td>30% Landfill</td>
<td>15 JOBS IN WTE FACILITIES</td>
</tr>
<tr>
<td></td>
<td>2% Waste-to-Energy</td>
<td>32 TOTAL JOBS</td>
</tr>
</tbody>
</table>

### Arnold O. Chantland Resource Recovery Plant

**Ames, IA // Story County**

4th US Congressional District

Owner: City of Ames (public)
Operator: City of Ames (public)

- **Started:** 1975
- **Technology:** RDF
- **Capacity (MSW):** 175 tons per day
- **Boilers:** 1
- **Elec. Capacity:** 4 MW
- **People Served:** 69,898

110 Center Ave., Ames, IA 50010

www.cityofames.org
MAINE

Waste-To-Energy State Stats — 3 Facilities

<table>
<thead>
<tr>
<th>WTE Capacity</th>
<th>MSW Breakdown</th>
<th>JOBS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1,470 TONS/ DAY</strong></td>
<td>34% WTE</td>
<td><strong>$146.6 MILLION</strong></td>
</tr>
<tr>
<td><strong>44.7 MW</strong></td>
<td>51%</td>
<td><strong>TOTAL ECONOMIC OUTPUT</strong></td>
</tr>
<tr>
<td>WASTE CAPACITY</td>
<td>Recycling/Composting</td>
<td><strong>153 JOBS IN WTE FACILITIES</strong></td>
</tr>
<tr>
<td>ELECTRICITY CAPACITY</td>
<td>Waste-to-Energy</td>
<td><strong>615 TOTAL JOBS</strong></td>
</tr>
</tbody>
</table>

ecomaine

Portland, ME // Cumberland County
1st US Congressional District

Owner: ecomaine (public)
Operator: ecomaine (public)

Started: 1988
Technology: Mass Burn
Capacity (MSW): 550 tons per day
Boilers: 2
Elec. Capacity: 14.7 MW
People Served: 250,000
Certifications: ISO 14001

64 Blueberry Rd, Portland, ME 04102
www.ecomaine.org

Mid-Maine Waste Action Corporation

Auburn, ME // Androscoggin County
2nd US Congressional District

Owner: Mid-Maine Waste Action Corporation (public)
Operator: Mid-Maine Waste Action Corporation (public)

Started: 1992
Technology: Mass Burn
Capacity (MSW): 200 tons per day
Boilers: 2
Elec. Capacity: 5 MW
People Served: 65,000

110 Goldthwaite Rd, Auburn, ME 04211
www.midmainewaste.com
MAINE

Penobscot Energy Recovery Company

Orrington, ME // Penobscot County
2nd US Congressional District
Owner: PERC holdings LLC (private)
Operator: ESOCO Orrington, Inc. (private)

- Started: 1988
- Technology: RDF
- Capacity (MSW): 720 tons per day
- Boilers: 2
- Elec. Capacity: 25 MW
- People Served: 400,000

29 Industrial Way, Orrington, ME 04474
www.percwte.com | www.mercmaine.org

MARYLAND

Waste-To-Energy State Stats — 2 Facilities

<table>
<thead>
<tr>
<th>WTE Capacity</th>
<th>MSW Breakdown</th>
<th>JOBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,050 TONS/DAY</td>
<td>WASTE CAPACITY</td>
<td>$183.4 MILLION TOTAL ECONOMIC OUTPUT</td>
</tr>
<tr>
<td>170,000 LBS/HR</td>
<td>STEAM CAPACITY</td>
<td>160 JOBS IN WTE FACILITIES</td>
</tr>
<tr>
<td>123.4 MW</td>
<td>ELECTRICITY CAPACITY</td>
<td>458 TOTAL JOBS</td>
</tr>
</tbody>
</table>

23% WTE
Landfill
Recycling/Composting
Waste-to-Energy

Montgomery County Resource Recovery Facility

Dickerson, MD // Montgomery County
6th US Congressional District
Owner: Northeast Maryland Waste Disposal Authority (public)
Operator: Covanta Montgomery, Inc. (private)

- Started: 1995
- Technology: Mass Burn
- Capacity (MSW): 1,800 tons per day
- Boilers: 3
- Capacity: 63.4 MW
- People Served: 971,600

21204 Martinsburg Road, Dickerson MD 20842
www.covanta.com | www.nmwda.org
Maryland
Wheelabrator Baltimore

Baltimore, MD // Baltimore County
3rd US Congressional District
Owner: Wheelabrator Baltimore, L.P. (private)
Operator: Wheelabrator Baltimore, L.P. (private)

- Started: 1985
- Technology: Mass Burn
- Capacity (MSW): 2,250 tons per day
- Boilers: 3
- Steam Capacity: 170,000 lbs/hr
- Elec. Capacity: 60 MW
- People Served: 1,427,232

Massachusetts
Waste-To-Energy State Stats — 7 Facilities

- WTE Capacity: 9,490 tons/day (Waste Capacity)
- Steam Capacity: 68,000 lbs/hr
- Electricity Capacity: 256.9 MW

- MSW Breakdown: 42% WTE
- JOBS: $591.6 million total economic output
  - 489 jobs in WTE facilities
  - 1,441 total jobs

Haverhill Resource Recovery Facility

Haverhill, MA // Essex County
3rd US Congressional District
Owner: Covanta Haverhill, Inc. (private)
Operator: Covanta Haverhill, Inc. (private)

- Started: 1989
- Technology: Mass Burn
- Capacity (MSW): 1,650 tons per day
- Boilers: 2
- Elec. Capacity: 44.6 MW
- People Served: 475,000

www.wtienergy.com

1801 Annapolis Rd, Baltimore, MD 21230

100 Recovery Way, Haverhill, MA 01385

www.covanta.com
Pioneer Valley Resource Recovery Facility

Agawam, MA // Hampden County
1st US Congressional District
Owner: Covanta Springfield, LLC. (private)
Operator: Covanta Springfield, LLC. (private)

- Started: 1988
- Technology: Modular
- Capacity (MSW): 400 tons per day
- Boilers: 3
- Elec. Capacity: 9.4 MW
- People Served: 300,000

SEM ASS Resource Recovery Facility

West Wareham, MA // Plymouth County
9th US Congressional District
Owner: Covanta SEMASS, L.P. (private)
Operator: Covanta SEMASS, L.P. (private)

- Started: 1989
- Technology: RDF
- Capacity (MSW): 2,700 tons per day
- Boilers: 3
- Elec. Capacity: 78 MW
- People Served: 1,000,000

Wheelabrator Millbury

Millbury, MA // Worcester County
2nd US Congressional District
Owner: Wheelabrator Millbury Inc. (private)
Operator: Wheelabrator Millbury Inc. (private)

- Started: 1987
- Technology: Mass Burn
- Capacity (MSW): 1,500 tons per day
- Boilers: 2
- Elec. Capacity: 46 MW
- People Served: 750,000
MASSACHUSETTS
Pittsfield Resource Recovery Facility

Pittsfield, MA // Berkshire County
1st US Congressional District
Owner: Covanta Pittsfield, LLC. (private)
Operator: Covanta Pittsfield, LLC. (private)

- Started: 1981
- Technology: Mass Burn
- Capacity (MSW): 240 tons per day
- Boilers: 2
- Steam Capacity: 68,000 lbs/hr
- Elec. Capacity: 0.9 MW
- People Served: 70,000

Wheelabrator North Andover

North Andover, MA // Essex County
6th US Congressional District
Owner: Wheelabrator North Andover Inc.
Operator: Wheelabrator North Andover Inc.

- Started: 1985
- Technology: Mass Burn
- Capacity (MSW): 1,500 tons per day
- Boilers: 2
- Elec. Capacity: 40 MW
- People Served: 426,000

Wheelabrator Saugus

Saugus, MA // Essex County
6th US Congressional District
Owner: Wheelabrator Saugus Inc. (private)
Operator: Wheelabrator Saugus Inc. (private)

- Started: 1975
- Technology: Mass Burn
- Capacity (MSW): 1,500 tons per day
- Boilers: 2
- Elec. Capacity: 38 MW
- People Served: 850,000

500 Hubbard Ave., Pittsfield, MA 01201
www.covanta.com

285 Holt Rd., North Andover, MA 01845
www.wtienergy.com

100 Salem Turnpike, Saugus, MA 01906
www.wtienergy.com
MICHIGAN

Waste-To-Energy State Stats — 2 Facilities

<table>
<thead>
<tr>
<th>WTE Capacity</th>
<th>MSW Breakdown</th>
<th>JOBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,925 TONS /DAY</td>
<td>WASTE CAPACITY</td>
<td>$185.3 MILLION</td>
</tr>
<tr>
<td>84.8 MW</td>
<td>ELECTRICITY CAPACITY</td>
<td>TOTAL ECONOMIC OUTPUT</td>
</tr>
<tr>
<td>228,300 LBS/HR</td>
<td>STEAM CAPACITY</td>
<td>196 JOBS IN WTE FACILITIES</td>
</tr>
<tr>
<td></td>
<td></td>
<td>735 TOTAL JOBS</td>
</tr>
</tbody>
</table>

Detroit Renewable Power

Detroit, MI // Wayne County
13th US Congressional District
Owner: Detroit Renewable Energy LLC (private)
Operator: Detroit Renewable Energy LLC (private)

 Started: 1989
Technology: RDF
Capacity (MSW): 3,300 tons per day
Boilers: 3
Elec. Capacity: 68 MW
Steam Capacity: 228,300 lbs/hr
People Served: 1,000,000

Kent County Waste-to-Energy Facility

Grand Rapids, MI // Kent County
3rd US Congressional District
Owner: Kent County (public)
Operated by: Covanta Kent, Inc. (private)

 Started: 1990
Technology: Mass Burn
Capacity (MSW): 625 tons per day
Boilers: 2
Elec. Capacity: 16.8 MW
People Served: 605,213

5700 Russell St., Detroit, MI 48211
www.detroitrenewablepower.com I www.gdrra.org

950 Market Ave. SW, Grand Rapids, MI 49503
MINNESOTA

Waste-To-Energy State Stats — 8 Facilities

<table>
<thead>
<tr>
<th>WTE Capacity</th>
<th>MSW Breakdown</th>
<th>JOBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,572 TONS/DAY</td>
<td>WASTE CAPACITY</td>
<td>$193.1 MILLION</td>
</tr>
<tr>
<td>123.2 MW</td>
<td>ELECTRICITY CAPACITY</td>
<td>TOTAL ECONOMIC OUTPUT</td>
</tr>
<tr>
<td>168,000 LBS/HR</td>
<td>STEAM CAPACITY</td>
<td>322 JOBS IN WTE FACILITIES</td>
</tr>
</tbody>
</table>

Great River Energy—Elk River Station

Elk River, MI // Sherburne County
6th US Congressional District
Owner: Great River Energy (private)
Operator: Great River Energy (private)

- **Started:** 1989
- **Technology:** RDF
- **Capacity (MSW):** 1,000 tons per day
- **Boilers:** 3
- **Elec. Capacity:** 29 MW
- **People served:** 850,000

17845 E. Highway 10, Elk River, MN 55330
www.greatriverenergy.com

Hennepin Energy Resource Center (HERC)

Minneapolis, MN // Hennepin County
5th US Congressional District
Owner: Hennepin County (public)
Operator: GRE HERC Services, LLC (private)

- **Started:** 1989
- **Technology:** Mass Burn
- **Capacity (MSW):** 1,212 tons per day
- **Boilers:** 2
- **Elec. Capacity:** 36.7 MW
- **Steam Capacity:** 20,000 lbs/hr
- **People served:** 1,156,212

505 6th Ave. North, Minneapolis, MN 55405
www.hennepin.us/HERC
Olmsted Waste-to-Energy Facility

Rochester, MN // Olmsted County
1st US Congressional District
Owner: Olmsted County (public)
Operator: Olmsted County (public)

- Started: 1988 (units 1-2); 2010 (unit 3)
- Technology: Mass burn
- Capacity (MSW): 400 tons per day
- Boilers: 3
- Steam Capacity: 61,000 lbs/hr
- Elec. Capacity: 9.5 MW
- People Served: 140,000

Perham Resource Recovery Facility

Perham, MN // Otter Tail County
7th US Congressional District
Owner: Prairie Lakes Municipal Solid Waste Authority (public)
Operator: Prairie Lakes Municipal Solid Waste Authority (public)

- Started: 1986; 2014 (expansion)
- Technology: Mass Burn
- Capacity (MSW): 200 tons per day
- Boilers: 2
- Elec. Capacity: 4.5 MW
- People Served: 75,000

Polk County Solid Waste Resource Recovery Facility

Fosston, MN // Polk County
7th US Congressional District
Owner: Polk County (public)
Operator: Polk County (public)

- Started: 1988
- Technology: Modular
- Capacity (MSW): 80 tons per day
- Boilers: 2
- Steam Capacity: 21,000 lbs/hr
- People Served: 90,000
MINNESOTA

Pope/Douglas Waste-to-Energy Facility

Alexandria, MN // Douglas County
7th US Congressional District
Owner: Pope/Douglas Solid Waste Joint Powers Board (public)
Operator: Pope/Douglas Solid Waste Joint Powers Board (public)

Started: 1987 (units 1-2); 2011 (unit 3)
Technology: Mass Burn
Capacity (MSW): 240 tons per day
Boilers: 3
Steam Capacity: 36,000 lbs/hr
Elec. Capacity: 0.5 MW
People served: 42,000

Xcel Energy—Red Wing Steam Plant

Red Wing, MN // Goodhue County
2nd US Congressional District
Owner: Xcel Energy (private)
Operator: Xcel Energy (private)

Started: 1987
Technology: RDF
Capacity (MSW): 720 tons per day
Boilers: 2
Elec. Capacity: 24 MW
People Served: 1,280,891

Xcel Energy—Wilmarth Plant

Mankato, MN // Blue Earth County
1st US Congressional District
Owner: Xcel Energy (private)
Operator: Xcel Energy (private)

Started: 1987
Technology: RDF
Capacity (MSW): 720 tons per day
Boilers: 2
Elec. Capacity: 19 MW

2115 Jefferson St., Alexandria, MN 56308
www.popedouglasrecycle.com

801 E. 5th St., Red Wing, MN 55066
www.xcelenergy.com

1040 Summit Ave., Mankato, MN 56001
www.xcelenergy.com
The United States currently generates 390 million tons of trash per year, or 7 pounds per person per day. Although many states have the physical space for trash, it is environmentally unsustainable to take garbage and bury it in the ground at landfills, where it decomposes and releases potent greenhouse-gas pollution. Though garbage is not something we tend to actively think about on a daily basis, specifically as it relates to climate change, the United States must begin developing policies to limit the environmental consequences that result from our generation of garbage.

There is an alternative waste management option that America has not significantly utilized but that could help stem the flow of waste, and thus pollution emissions, in our country: energy-from-waste facilities. According to the EPA, for every ton of garbage processed at an energy-from-waste facility, approximately one ton of emitted carbon-dioxide equivalent in the atmosphere is prevented.


The Center for American Progress is a progressive public policy research and advocacy organization.
## NEW JERSEY

### Waste-To-Energy State Stats — 5 Facilities

<table>
<thead>
<tr>
<th>WTE Capacity</th>
<th>MSW Breakdown</th>
<th>JOBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>5,717 TONS /DAY</td>
<td>20% WTE</td>
<td>$496.9 MILLION TOTAL ECONOMIC OUTPUT</td>
</tr>
<tr>
<td>169.6 MW</td>
<td>WASTE CAPACITY</td>
<td>274 JOBS IN WTE FACILITIES</td>
</tr>
</tbody>
</table>

### Covanta Camden Energy Recovery Center

**Camden, NJ // Camden County**
1st US Congressional District

Owner: Covanta Camden GP, LLC (private)
Operator: Covanta Camden GP, LLC (private)

- **Started:** 1991
- **Technology:** Mass Burn
- **Capacity (MSW):** 1,050 tons per day
- **Boilers:** 3
- **Elec. Capacity:** 34 MW
- **People Served:** 506,420

600 Morgan St., Camden NJ 08104
www.covanta.com

### Covanta Warren Energy Resource Company Facility

**Oxford, NJ // Warren County**
5th US Congressional District

Owner: Covanta Warren Energy Resource Co. L.P. (private)
Operator: Covanta Warren Energy Resource Co. L.P. (private)

- **Started:** 1988
- **Technology:** Mass Burn
- **Capacity (MSW):** 450 tons per day
- **Boilers:** 2
- **Elec. Capacity:** 13.5 MW
- **People Served:** 35,000

218 MT. Pisgah Ave., Oxford, NJ 07863
www.covanta.com
Essex County Resource Recovery Facility

Newark, NJ // Essex County
8th US Congressional District
Owner: Covanta Essex Company (private)
Operator: Covanta Essex Company (private)

- **Started:** 1990
- **Technology:** Mass burn
- **Capacity (MSW):** 2,277 tons per day
- **Boilers:** 3
- **Elec. Capacity:** 66 MW
- **People served:** 1,200,000

Union County Resource Recovery Facility

Rahway, NJ // Union County
10th US Congressional District
Owner: Union County Utilities Authority (public)
Operator: Covanta Union, LLC (private)

- **Started:** 1994
- **Technology:** Mass Burn
- **Capacity (MSW):** 1,440 tons/day
- **Boilers:** 3
- **Elec. Capacity:** 42.1 MW
- **People Served:** 500,000

Wheelabrator Gloucester Company

Westville, NJ // Gloucester County
1st US Congressional District
Owner: Wheelabrator Gloucester Company, LP. (private)
Operator: Wheelabrator Gloucester Company, LP. (private)

- **Started:** 1990
- **Technology:** Mass Burn
- **Capacity (MSW):** 500 tons per day
- **Boilers:** 2
- **Elec. Capacity:** 14 MW
- **People Served:** 263,000

183 Raymond Blvd., Newark, NJ 01705
www.covanta.com

1499 Rt. 1 North, Rahway, NJ 07065
www.unioncountyutilitiesauthority.org | www.covanta.com

600 US Route 130, Westville, NJ 08093
www.xcelenergy.com
NEW YORK

Waste-To-Energy State Stats — 10 Facilities

<table>
<thead>
<tr>
<th>WTE Capacity</th>
<th>MSW Breakdown</th>
<th>JOBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>11,131 TONS /DAY</td>
<td>WASTE CAPACITY</td>
<td>$726.8 MILLION</td>
</tr>
<tr>
<td>285.1 MW</td>
<td>ELECTRICITY CAPACITY</td>
<td>TOTAL ECONOMIC OUTPUT</td>
</tr>
<tr>
<td>548,000 LBS/HR</td>
<td>STEAM CAPACITY</td>
<td>522 JOBS IN WTE FACILITIES</td>
</tr>
</tbody>
</table>

21% WTE

Babylon Resource Recovery Center

West Babylon, NY // Suffolk County
3rd US Congressional District

Owner: Covanta Babylon, Inc. (private)
Operator: Covanta Babylon, Inc. (private)

Started: 1989
Technology: Mass Burn
Capacity (MSW): 750 tons per day
Boilers: 2
Elec. Capacity: 16.8 MW
People Served: 430,000

125 West Gleam St, West Babylon, NY 11704
www.covanta.com

Covanta Hempstead

Westbury, NY // Nassau County
4th US Congressional District

Owner: Covanta Hempstead Co. (private)
Operator: Covanta Hempstead Co. (private)

Started: 1989
Technology: Mass Burn
Capacity (MSW): 2,505 tons per day
Boilers: 3
Elec. Capacity: 72 MW
People Served: 1,000,000

600 Merchants Concourse, Westbury, NY 11590
www.covanta.com
**NEW YORK**

**Dutchess County Resource Recovery Facility**

**Poughkeepsie, NY // Dutchess County**
18th US Congressional District  
Owner: Dutchess County Resource Recovery Agency (public)  
Operator: Wheelabrator Dutchess County Inc. (private)

- **Started:** 1987  
- **Technology:** Mass burn  
- **Capacity (MSW):** 450 tons per day  
- **Boilers:** 2  
- **Elec. Capacity:** 9.8 MW  
- **People served:** 293,562

![Dutchess County Resource Recovery Facility Image](image1)

**Huntington Resource Recovery Facility**

**East Northport, NY // Suffolk County**
3rd US Congressional District  
Owner: Covanta Huntington, Inc. (private)  
Operator: Covanta Huntington, Inc. (private)

- **Started:** 1991  
- **Technology:** Mass Burn  
- **Capacity (MSW):** 750 tons per day  
- **Boilers:** 3  
- **Elec. Capacity:** 24.3 MW  
- **People served:** 345,000

![Huntington Resource Recovery Facility Image](image2)

**MacArthur Waste-to-Energy Facility**

**Ronkonkoma, NY // Suffolk County**
2nd US Congressional District  
Owner: Islip Resource Recovery Agency (public)  
Operator: Covanta MacArthur Renewable Energy, Inc. (private)

- **Started:** 1990  
- **Technology:** Mass Burn  
- **Capacity (MSW):** 486 tons per day  
- **Boilers:** 2  
- **Elec. Capacity:** 12 MW  
- **People served:** 301,000

![MacArthur Waste-to-Energy Facility Image](image3)

![Footnote](image4)
Niagara Falls Resource Recovery Facility

Niagara Falls, NY // Niagara County
26th US Congressional District
Owner: Covanta Niagara Company (private)
Operator: Covanta Niagara Company (private)

- Started: 1980
- Technology: Mass Burn
- Capacity (MSW): 2,250 tons per day
- Boilers: 2
- Elec. Capacity: 32 MW
- Steam Capacity: 470,000 lbs/hr
- People Served: 900,000

Onondaga Resource Recovery Facility

Jamesville, NY // Onondaga County
24th US Congressional District
Owner: Covanta Onondaga, L.P. (private)
Operator: Covanta Onondaga, L.P. (private)

- Started: 1995
- Technology: Mass Burn
- Capacity (MSW): 990 tons per day
- Boilers: 3
- Elec. Capacity: 39.2 MW
- People Served: 470,000

Oswego County Energy Recovery Facility

Fulton, NY // Oswego County
2nd US Congressional District
Owner: Oswego County (public)
Operator: Oswego County (public)

- Started: 1986
- Technology: Modular
- Capacity (MSW): 200 tons per day
- Boilers: 2
- Elec. Capacity: 4 MW
- Steam Capacity: 60,000 lbs/hr
- People Served: 126,000
Wheelabrator Hudson Falls

Hudson Falls, NY // Washington County
21st US Congressional District

Owner: Wheelabrator Hudson Falls LLC (private)
Operator: Wheelabrator Hudson Falls LLC (private)

- **Started:** 1991
- **Technology:** Mass burn
- **Capacity (MSW):** 500 tons per day
- **Boilers:** 2
- **Elec. Capacity:** 15 MW
- **People Served:** 345,966

Wheelabrator Westchester

Peekskill, NY // Westchester County
17th US Congressional District

Owner: Wheelabrator Westchester, L.P. (private)
Operator: Wheelabrator Westchester, L.P. (private)

- **Started:** 1995
- **Technology:** Mass Burn
- **Capacity (MSW):** 2,250 tons per day
- **Boilers:** 3
- **Elec. Capacity:** 60 MW
- **Steam Capacity:** 18,000 lbs/hr
- **People Served:** 855,000

The premier conference and trade show focusing on the municipal waste-to-energy sector.

NAWTEC is co-sponsored by the Energy Recovery Council (ERC) and the Solid Waste Association of North America (SWANA), in partnership the Waste-to-Energy Research and Technology Council (WTERT).

- 1993 – Islip, NY
- 1994 – Boston, MA
- 1995 – Washington, DC
- 1996 – Atlantic City, NJ
- 1997 – RTP, NC
- 1998 – Miami Beach, FL
- 1999 – Tampa, FL
- 2000 – Nashville, TN
- 2001 – Miami, FL
- 2002 – Philadelphia, PA
- 2003 – Tampa, FL
- 2004 – Savannah, GA
- 2005 – Orlando, FL
- 2006 – Tampa, FL
- 2007 – Miami, FL
- 2008 – Philadelphia, PA
- 2009 – Chantilly, VA
- 2010 – Orlando, FL
- 2011 – Lancaster, PA
- 2012 – Portland, ME
- 2013 – Ft. Myers, FL
- 2014 – Reston, VA
- 2015 – Tampa, FL
- 2016 – West Palm Beach, FL
- 2017 – Minneapolis, MN
- 2018 – Lancaster, PA
- 2019 – Reston, VA

http://nawtec.org
Waste-To-Energy State Stats — 1 Facility

<table>
<thead>
<tr>
<th>WTE Capacity</th>
<th>MSW Breakdown</th>
<th>JOBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,125 TONS/DAY</td>
<td>4% WTE</td>
<td>$31.8 MILLION TOTAL ECONOMIC OUTPUT</td>
</tr>
<tr>
<td>16.8 MW</td>
<td>ELECTRICITY CAPACITY</td>
<td>38 JOBS IN WTE FACILITIES</td>
</tr>
<tr>
<td>80,000 LBS/HR</td>
<td>STEAM CAPACITY</td>
<td>116 TOTAL JOBS</td>
</tr>
</tbody>
</table>

Covanta Tulsa Renewable Energy Facility

Tulsa, OK // Tulsa County
1st US Congressional District

Owner: Covanta Tulsa Renewable Energy LLC (private)
Operator: Covanta Tulsa Renewable Energy LLC (private)

| Started: | 1986; 2011 (CLEERGAS retrofit) |
| Technology: | Mass Burn (units 1-2); CLEERGAS (unit3) |
| Capacity (MSW): | 750 tons per day |
| Boilers: | 3 |
| Elec. Capacity: | 16.8 MW |
| Steam Capacity: | 80,000 lbs/hr |
| People Served: | 388,300 |

2122 South Yukon, Ave, Tulsa, OK 74107
www.covanta.com
Getting it Right: The Next Fifteen Years of Energy

Excerpt—“We first highlight how a mass-based approach allows states to support a wider range of carbon reducing activities, zeroing in on four key examples: energy efficiency retrofits for commercial and public buildings, existing carbon negative waste-to-energy generation, carbon capture and storage retrofits for existing fossil plants, and existing zero-emitting nuclear power. We then explain how the mass-based approach provides a simpler path to compliance, better compatibility with existing state energy policies, and greater environmental integrity compared to a rate based approach.”

Access the full report here:

http://www.thirdway.org/report/getting-it-right-the-next-fifteen-years-of-energy
Pennsylvania

Waste-To-Energy State Stats — 6 Facilities

<table>
<thead>
<tr>
<th>WTE Capacity</th>
<th>MSW Breakdown</th>
<th>JOBS</th>
</tr>
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<tbody>
<tr>
<td>9,560 TONS /DAY</td>
<td>22% WTE</td>
<td>$586.0 MILLION</td>
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<tr>
<td>267.9 MW</td>
<td>42% Landfill</td>
<td>TOTAL ECONOMIC OUTPUT</td>
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<tr>
<td></td>
<td>36% Recycling/Composting</td>
<td>JOBS IN WTE FACILITIES</td>
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<tr>
<td></td>
<td>22% Waste-to-Energy</td>
<td>TOTAL JOBS</td>
</tr>
<tr>
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<td></td>
<td>354</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1,114</td>
</tr>
</tbody>
</table>

Covanta Plymouth Renewable Energy

Conshohocken, PA // Montgomery County
13th US Congressional District

Owner: Covanta Plymouth Renewable Energy, LLC (private)
Operator: Covanta Plymouth Renewable Energy, LLC (private)

Started: 1982
Technology: Mass Burn
Capacity (MSW): 1,216 tons per day
Boilers: 2
Capacity: 32 MW
People Served: 421,786

1155 Conshohocken Rd., Conshohocken, PA 19428
www.covanta.com

Delaware Valley Resource Recovery Facility

Chester, PA // Delaware County
1st US Congressional District

Owner: Covanta Delaware Valley, L.P. (private)
Operator: Covanta Delaware Valley, L.P. (private)

Started: 1992
Technology: Mass Burn
Capacity (MSW): 3,500 tons per day
Boilers: 6
Elec. Capacity: 87 MW
People Served: 1,000,000

10 Highland Ave., Chester, PA 19013
www.covanta.com
Lancaster County Resource Recovery Facility

Bainbridge, PA // Lancaster County
16th US Congressional District
Owner: Lancaster County Solid Waste Mgmt. Authority (public)
Operator: Covanta Lancaster, Inc. (private)

- **Started:** 1991
- **Technology:** Mass Burn
- **Capacity (MSW):** 1,200 tons per day
- **Boilers:** 3
- **Elec. Capacity:** 33.1 MW
- **People Served:** 420,000

Susquehanna Resource Management Complex

Harrisburg, PA // Dauphin County
11th US Congressional District
Owner: Lancaster County Solid Waste Mgmt. Authority (public)
Operator: Covanta Harrisburg, Inc. (private)

- **Started:** 1972: 2006 (retrofit)
- **Technology:** Mass Burn
- **Capacity (MSW):** 800 tons/day
- **Boilers:** 3
- **Elec. Capacity:** 20.8 MW
- **People Served:** 100,000

Wheelabrator Falls

Morrisville, PA // Bucks County
8th US Congressional District
Owner: Wheelabrator Falls Inc. (private)
Operator: Wheelabrator Falls Inc. (private)

- **Started:** 1994
- **Technology:** Mass Burn
- **Capacity (MSW):** 1,500 tons per day
- **Boilers:** 2
- **Elec. Capacity:** 53 MW
- **People Served:** 550,000
**York County Resource Recovery Center**

York, PA // York County  
4th US Congressional District  
Owner: York County Solid Waste Authority (public)  
Operator: Covanta York Renewable Energy, LLC (private)  

- **Started:** 1989  
- **Technology:** Mass Burn  
- **Capacity (MSW):** 1,344 tons per day  
- **Boilers:** 3  
- **Elec. Capacity:** 42 MW  
- **People Served:** 450,000

2651 Blackbridge Road, York, PA 17406  
www.ycswa.org | www.covanta.com

**Waste-To-Energy State Stats — 4 Facilities**

**Alexandria/Arlington Resource Recovery Facility**

Alexandria, VA  
8th US Congressional District  
Owner: Covanta Arlington/Alexandria Inc. (private)  
Operator: Covanta Arlington/Alexandria, Inc. (private)  

- **Started:** 1988  
- **Technology:** Mass Burn  
- **Capacity (MSW):** 975 tons per day  
- **Boilers:** 3  
- **Elec. Capacity:** 22 MW  
- **People Served:** 300,000

5301 Eisenhower Ave., Alexandria, VA 22304  
www.covanta.com
**Hampton/NASA Steam Plant**

Hampton, VA  
2nd US Congressional District

Owner: NASA and City of Hampton (public)  
Operator: City of Hampton (public)

- **Started:** 1980  
- **Technology:** Mass Burn  
- **Capacity (MSW):** 240 tons per day  
- **Boilers:** 6  
- **Steam Capacity:** 66,000 lbs/hr  
- **People Served:** 180,000

**I-95 Energy/Resource Recovery Facility (Fairfax)**

Lorton, VA // Fairfax County  
11th US Congressional District

Owner: Covanta Fairfax, Inc. (private)  
Operator: Covanta Fairfax, Inc. (private)

- **Started:** 1990  
- **Technology:** Mass Burn  
- **Capacity (MSW):** 3,000 tons per day  
- **Boilers:** 4  
- **Elec. Capacity:** 93 MW  
- **People Served:** 1,651,647

**Wheelabrator Portsmouth**

Portsmouth, VA // Norfolk County  
3rd US Congressional District

Owner: Wheelabrator Portsmouth Inc. (private)  
Operator: Wheelabrator Portsmouth Inc. (private)

- **Started:** 1988  
- **Technology:** RDF  
- **Capacity (MSW):** 2,000 tons/day  
- **Boilers:** 4  
- **Steam Capacity:** 322,000 lbs/hr  
- **Elec. Capacity:** 60 MW  
- **People Served:** 1,127,790

www.hampton.gov

www.covanta.com

www.wtienergy.com
Spokane Waste-to-Energy Facility

Spokane, WA // Spokane County
5th US Congressional District

Owner: City of Spokane (public)
Operator: City of Spokane (public)

- **Started:** 1991
- **Technology:** Mass Burn
- **Capacity (MSW):** 800 tons per day
- **Boilers:** 2
- **Elec. Capacity:** 26 MW
- **People served:** 426,347

South 2000 Geiger Blvd., Spokane, WA 99224

http://my.spokanecity.org/solidwaste/waste-to-energy
Barron County Waste-to-Energy & Recycling Facility

Almena, WI // Barron County
7th US Congressional District
Owner: Barron County (public)
Operator: ZAC, Inc. (private)

Started: 1986
Technology: Modular
Capacity (MSW): 90 tons per day
Boilers: 2
Steam Capacity: 10,000 lbs/hr
Elect. Capacity: 2.0 MW
People served: 75,000

575 10 1/2 Avenue, Almena, WI 54805
www.barroncountywi.gov

Xcel Energy French Island Generating Station

La Crosse, WI // La Crosse County
3rd US Congressional District
Owner: Xcel Energy (private)
Operator: Xcel Energy (private)

Started: 1988
Technology: RDF (co-fired 50-50 with coal)
Capacity (MSW): 400 tons per day
Boilers: 2
Elect. Capacity: 28 MW
People Served: 250,000

200 Bainbridge St., La Crosse, WI 54601
www.xcelenergy.com
To keep plastic waste from reaching the ocean, Ocean Conservancy has identified treatment of waste by using gasification or incineration with energy recovery as an important strategy and evaluated several different methods of energy recovery (see table below). To understand the drivers of commercial viability for different waste-treatment options, Ocean Conservancy spoke with independent experts and industry representatives about conversion of waste to solids (by recycling plastic and creating fillers in non-plastic goods), oil (through pyrolysis), gas (through gasification), and electricity (through industrial and nonindustrial incineration), as well as various forms of landfilling.

Their analysis demonstrated that the most proven treatment option across all five metrics is incineration with energy recovery, followed by gasification. Incineration with energy recovery could be economically attractive for a subset of their focus countries (China, Thailand, and Vietnam). This is based on local electricity prices or feed-in tariffs, and incineration’s ability to consume large quantities of mixed waste even at low specifications. While incineration with energy recovery has received some favorable momentum in terms of government policies in many countries, it was one of the most controversial treatment options considered in this study. The report found that making gasification profitable requires high local-market prices for electricity, government-set feed-in tariffs for electricity, or high tipping fees for traditional waste disposal—conditions that are sometimes but certainly not always present.

The report also found that over the next five years, new technologies for valorizing low-value plastic, such as pyrolysis, must become commercially viable, which means high-leakage countries should provide the conditions that enable it. Therefore, change initiatives must promote market access for and the ability to deploy state-of-the-art waste management technology providers. Most importantly, this will require providing companies with secure feedstock, defined by waste composition and mass, and creating clear investment parameters in areas such as energy prices and feed-in tariffs, off-take agreements, and local public-finance options. Thus, expanding technology markets will also help bring down treatment costs. For example, based on the experience of the ethanol fuel sector, we found that investing in the expansion of pyrolysis capacity could reduce its

<table>
<thead>
<tr>
<th>Treatment options</th>
<th>Plastics elimination</th>
<th>Technical development</th>
<th>Commercial attractiveness</th>
<th>Pretreatment simplicity</th>
<th>Social/ environmental performance</th>
</tr>
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<tbody>
<tr>
<td>Recycling (waste to plastic)</td>
<td>□</td>
<td>□</td>
<td>□</td>
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<tr>
<td>Waste to oil (pyrolysis)²</td>
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<td>□</td>
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<tr>
<td>Waste to gas (gasification)⁴</td>
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<td>Waste to energy (refuse-derived fuel)</td>
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<tr>
<td>Waste to energy (incineration)</td>
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<tr>
<td>Sanitary landfill</td>
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1 Other chemical recycling methods are out of scope as they are not economical.

What leakage-reduction solutions are available?

- Closing leakage points within the collection system
- Increasing waste-collection rates by expanding collection service
- Using a variety of waste-to-fuel (e.g., gasification) or waste-to-energy (e.g., incineration with energy recovery) technologies to treat waste
- Manually sorting high-value plastic waste and converting much of the remainder to refuse-derived fuel (RDF).
The Energy Recovery Council is the trade association representing companies, organizations, and local governments engaged in recovering energy and materials from waste.

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