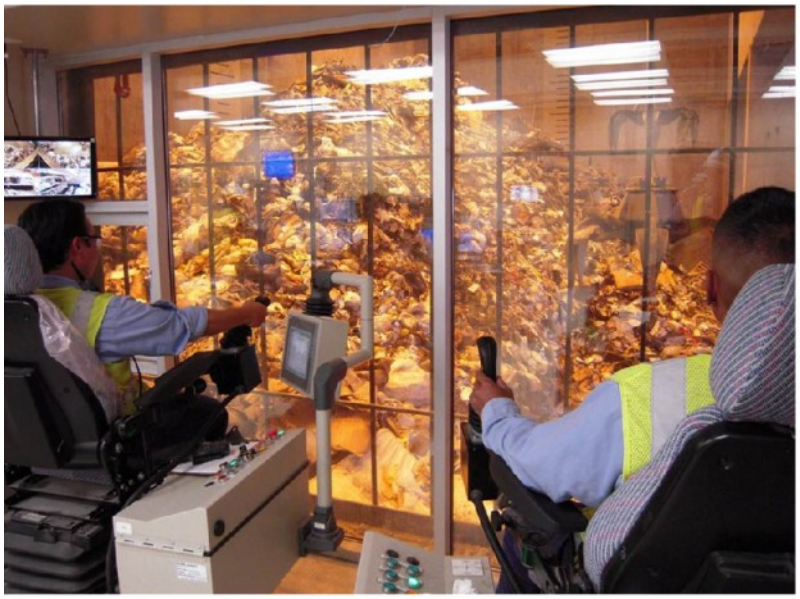

ENERGY RECOVERY COUNCIL

2018 DIRECTORY OF WASTE-TO-ENERGY FACILITIES

BY: TED MICHAELS AND KARUNYA KRISHNAN

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Oklahoma	43
Oregon	44
Pennsylvania	45
Virginia	47
Washington	49
Wisconsin	50

LIST OF WTE FACILITIES

Alabama

1) Huntsville Waste-to-Energy Facility (Huntsville)

California

2) Southeast Resource Recovery Facility (Long Beach)
3) Stanislaus County Resource Recovery Facility (Crows Landing)

Connecticut

4) Bristol Resource Recovery Facility (Bristol)
5) CRRA Hartford Trash-to-Energy Plant (Hartford)
6) Southeastern Connecticut Resource Recovery Facility (Preston)
7) Wheelabrator Bridgeport, L.P. (Bridgeport)
8) Wheelabrator Lisbon Inc. (Lisbon)

Florida

9) Bay County Waste-to-Energy Facility (Panama City)
10) Hillsborough County Resource Recovery Facility (Tampa)
11) Lake County Resource Recovery Facility (Okahumpka)
12) Lee County Resource Recovery Facility (Ft. Myers)
13) McKay Bay Refuse-to-Energy Facility (Tampa)
14) Miami-Dade County Resource Recovery Facility (Miami)
15) Palm Beach Renewable Energy Facility #1 (West Palm Beach)
16) Palm Beach Renewable Energy Facility #2 (West Palm Beach)
17) Pasco County Solid Waste Resource Recovery Facility (Spring Hill)
18) Pinellas County Resource Recovery Facility (St. Petersburg)
19) Wheelabrator South Broward Inc. (Ft. Lauderdale)

Hawaii

20) Honolulu Resource Recovery Venture—HPOWER (Kapolei)

Indiana

21) Indianapolis Resource Recovery Facility (Indianapolis)

Iowa

22) Arnold O. Chantland Resource Recovery Plant (Ames)

Maine

23) ecomaine (Portland)
24) Mid-Maine Waste Action Corporation (Auburn)
25) Penobscot Energy Recovery Company (Orrington)

Maryland

26) Montgomery County Resource Recovery Facility (Dickerson)
27) Wheelabrator Baltimore, L.P. (Baltimore)

Massachusetts

28) Haverhill Resource Recovery Facility (Haverhill)
29) Pioneer Valley Resource Recovery Facility (Agawam)
30) Pittsfield Resource Recovery Facility (Pittsfield)
31) SEMASS Resource Recovery Facility (West Wareham)
32) Wheelabrator Millbury Inc. (Millbury)
33) Wheelabrator North Andover Inc. (North Andover)
34) Wheelabrator Saugus Inc. (Saugus)

Michigan

35) Detroit Renewable Power (Detroit)
36) Kent County Waste-to-Energy Facility (Grand Rapids)

Minnesota

37) Great River Energy - Elk River Station (Elk River)
38) Hennepin Energy Resource Center (Minneapolis)
39) Olmsted Waste-to-Energy Facility (Rochester)
40) Perham Resource Recovery Facility (Perham)
41) Polk County Solid Waste Resource Recovery Facility (Fosston)
42) Pope/Douglas Waste-to-Energy Facility (Alexandria)
43) Xcel Energy - Red Wing Steam Plant (Red Wing)
44) Xcel Energy-Wilmarth Plant (Mankato)

New Hampshire

45) Wheelabrator Concord Company, L.P. (Concord)

New Jersey

46) Covanta Camden Energy Recovery Center (Camden)
47) Covanta Warren Energy Resource Company Facility (Oxford)
48) Essex County Resource Recovery Facility (Newark)
49) Union County Resource Recovery Facility (Rahway)
50) Wheelabrator Gloucester Company, L.P. (Westville)

New York

51) Babylon Resource Recovery Facility (West Babylon)
52) Covanta Hempstead (Westbury)
53) Dutchess County Resource Recovery Facility (Poughkeepsie)
54) Huntington Resource Recovery Facility (East Northport)
55) MacArthur Waste-to-Energy Facility (Ronkonkoma)
56) Niagara Resource Recovery Facility (Niagara Falls)
57) Onondaga County Resource Recovery Facility (Jamesville)
58) Oswego County Energy Recovery Facility (Fulton)
59) Wheelabrator Hudson Falls L.L.C. (Hudson Falls)
60) Wheelabrator Westchester, L.P. (Peekskill)

Oklahoma

61) Walter B. Hall Resource Recovery Facility (Tulsa)

Oregon

62) Marion County Solid Waste-to-Energy Facility (Brooks)

Pennsylvania

63) Covanta Plymouth Renewable Energy (Conshohocken)
64) Delaware Valley Resource Recovery Facility (Chester)
65) Lancaster County Resource Recovery Facility (Bainbridge)
66) Susquehanna Resource Management Complex (Harrisburg)
67) Wheelabrator Falls Inc. (Morrisville)
68) York County Resource Recovery Center (York)

Virginia

69) Alexandria/Arlington Resource Recovery Facility (Alexandria)
70) Hampton-NASA Steam Plant (Hampton)
71) I-95 Energy/Resource Recovery Facility (Lorton)
72) Wheelabrator Portsmouth Inc. (Portsmouth)

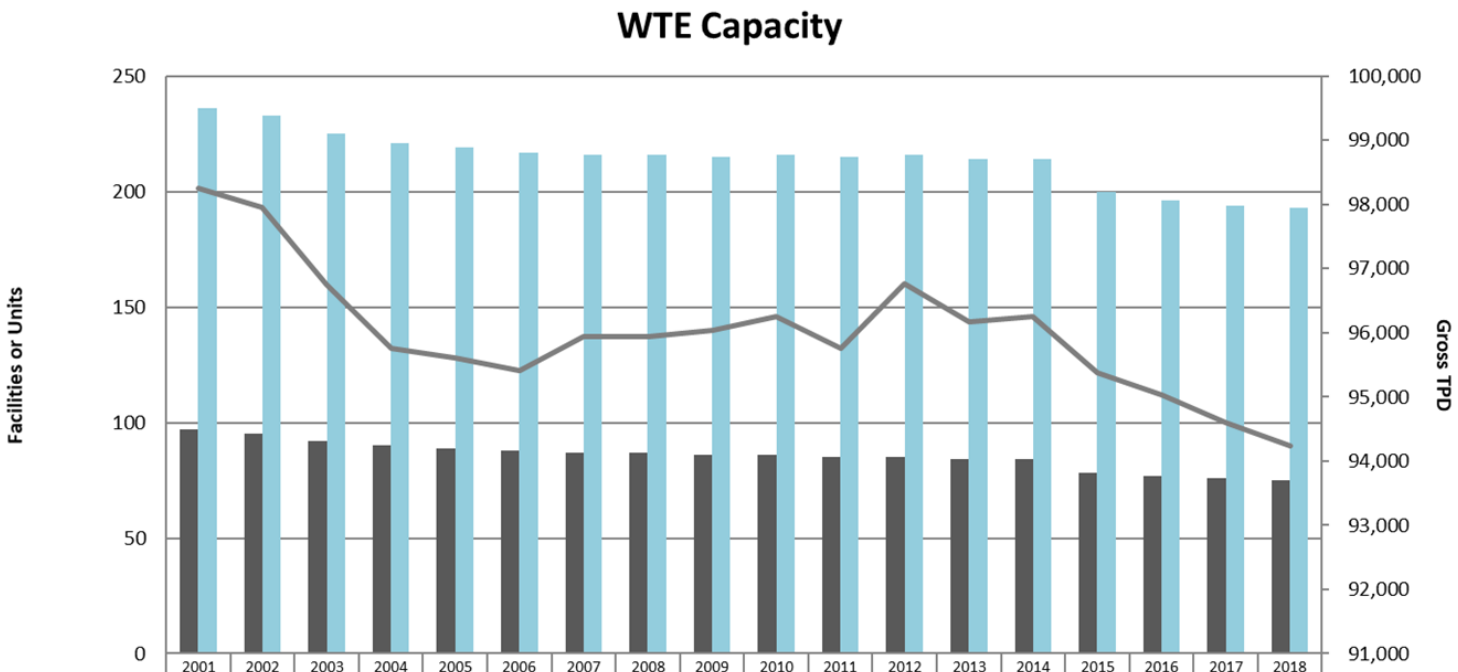
Washington

73) Wheelabrator Spokane Inc. (Spokane)

Wisconsin

74) Barron County Waste-to-Energy & Recycling Facility (Almena)
75) Xcel Energy French Island Generating Station (LaCrosse)

WASTE-TO-ENERGY CAPACITY



	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Facilities	97	95	92	90	89	88	87	87	86	86	85	85	84	84	78	77	76	75
Total Units	236	233	225	221	219	217	216	216	215	216	215	216	214	214	200	196	194	193
Gross TPD	98,252	97,958	96,753	95,753	95,603	95,403	95,945	95,945	96,045	96,245	95,765	96,765	96,165	96,249	95,383	95,023	94,603	94,243

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

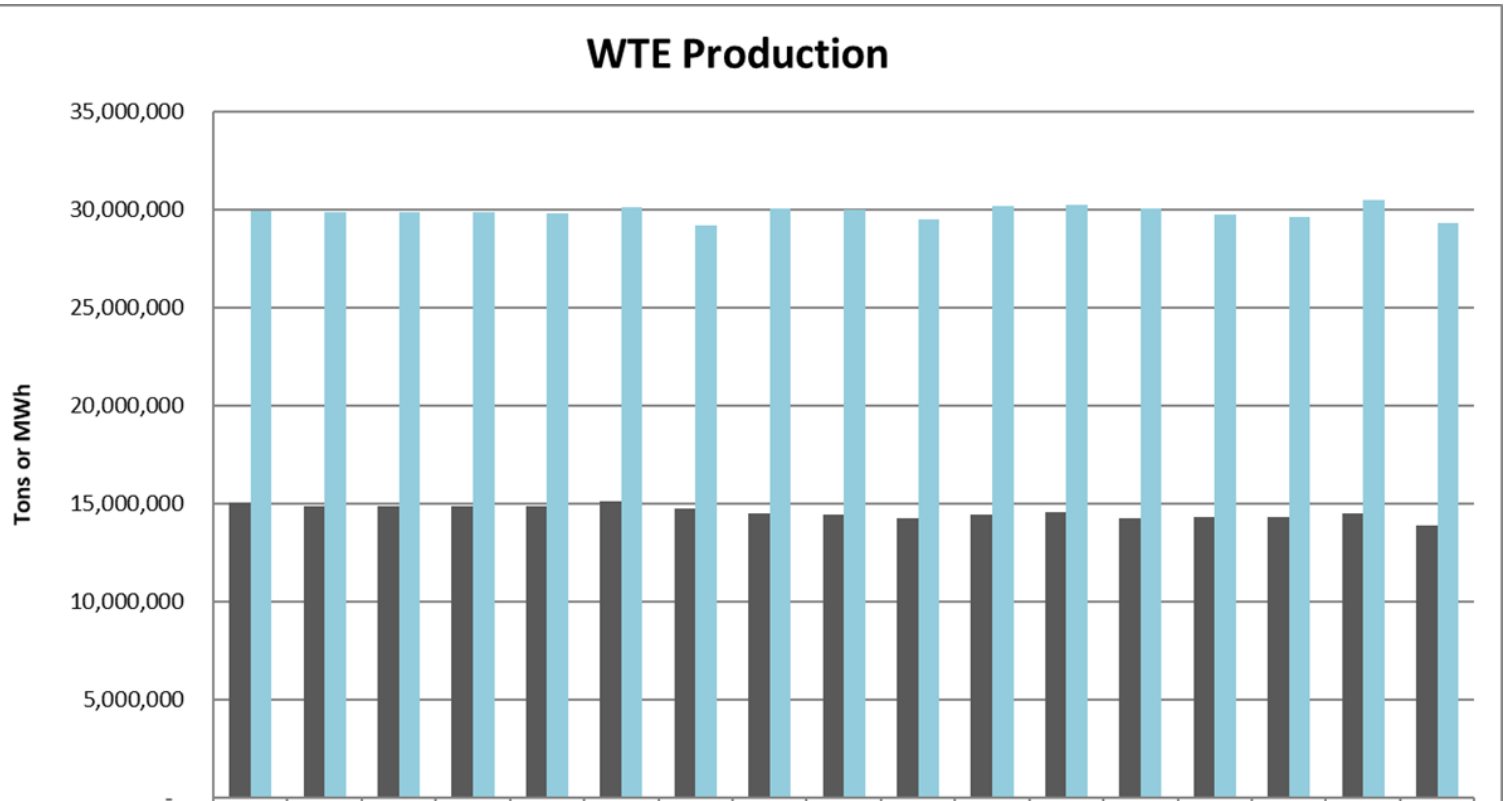
Operation	
Private	65
Public	10

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

WASTE-TO-ENERGY PRODUCTION

WTE facilities are extremely stable and reliable



	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Net Elec. Generation	15,033	14,886	14,877	14,871	14,878	15,080	14,748	14,519	14,438	14,218	14,422	14,565	14,214,	14,310,	14,300,	14,510,	13,876,
MSW Throughput	29,921	29,837	29,881	29,868	29,783	30,092	29,162	30,045	30,004	29,512	30,155	30,211	30,041	29,722	29,594	30,449	29,276

Total Production by U.S WTE Facilities

2017 MSW Throughput

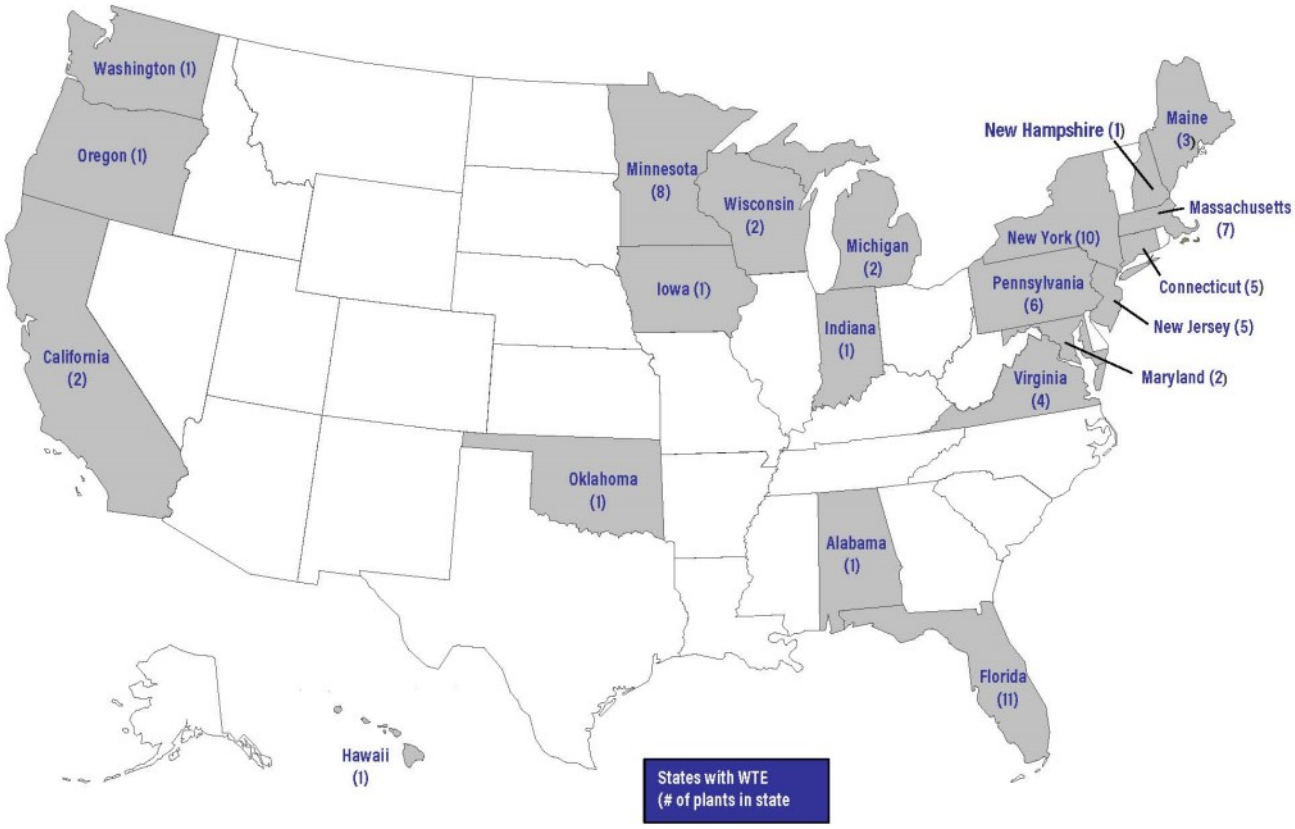
29,276,060
TONS

2017 Electric Generation

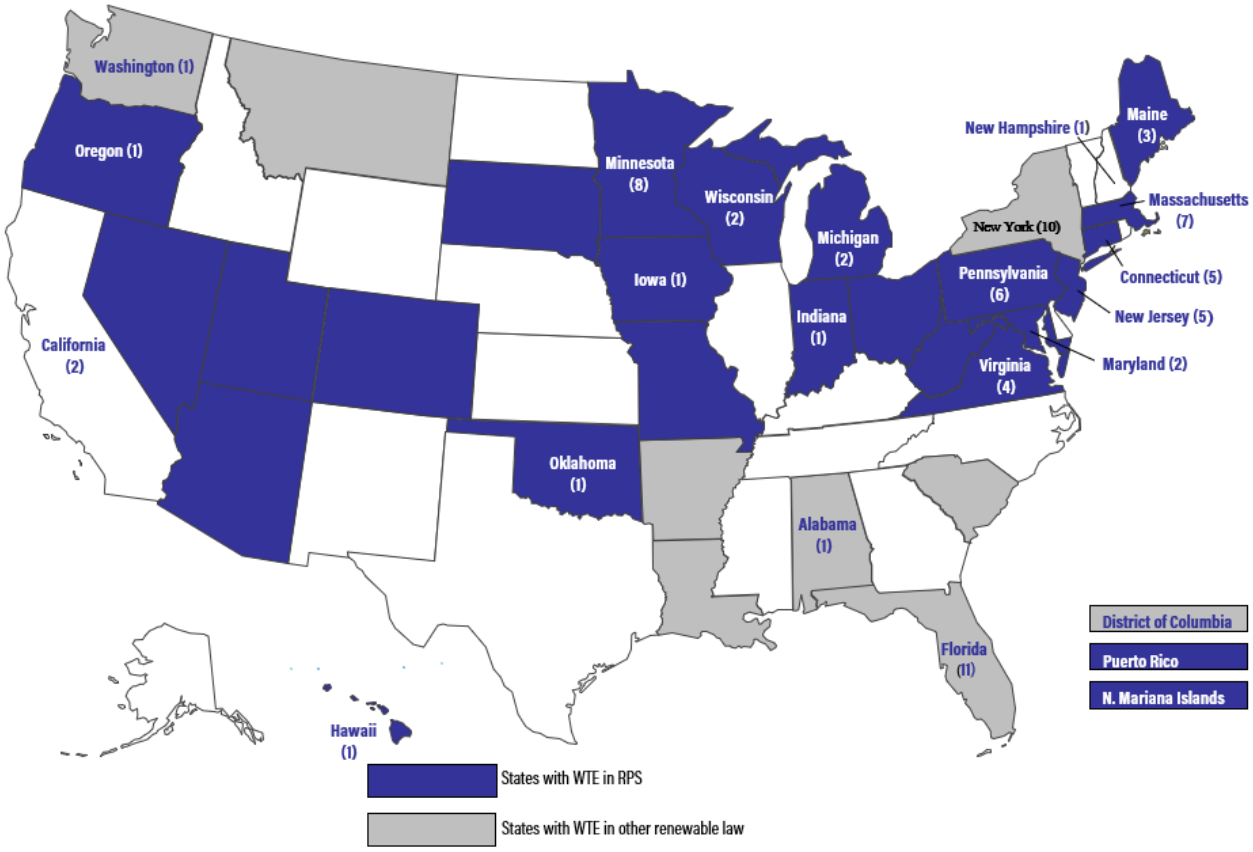
13,876,446
MWH

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.

75 WASTE-TO-ENERGY PLANTS IN 21 STATES



STATES DEFINING WTE AS RENEWABLE



WTE REDUCES GREENHOUSE GAS EMISSIONS

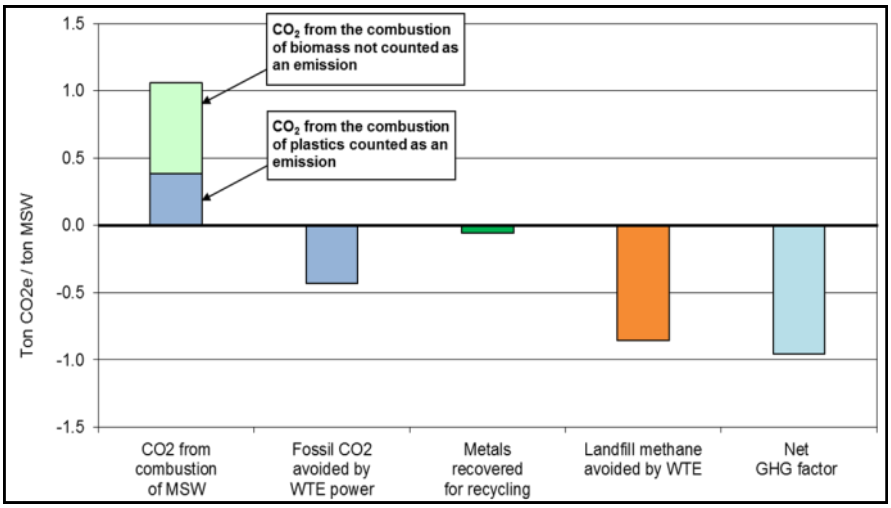
An Internationally-Recognized Source of GHG Emissions Mitigation

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 generates 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_2e 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 CO2 equivalents (CO2e) for every ton of MSW diverted from landfill and processed.



[1]EPA Clean Power Plan, 40 CFR 60 Subpart UUUU
[2]Kaplan, P.O, J. DeCarolis, and S. Thorneloe, 2009, Is it better to burn or bury waste for clean electricity generation? *Environ. Sci. Technology* 43 (6) pp1711-1717. http://pubs.acs.org/doi/abs/10.1021/es802395e
[3]IPCC, "Climate Change 2007: Synthesis Report. Contribution of Work Groups I, II, and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change" [Core Writing Team, Pachauri, R.K and Reisinger, A. (eds.)]. IPCC, Geneva, Switzerland, 104 pp.
[4]World Economic Forum. *Green Investing: Towards a Clean Energy Infrastructure.* January 2009.
[5]European Environment Agency, *Greenhouse gas emission trends and projections in Europe 2009: Tracking progress towards Kyoto targets* *http://www.eea.europa.eu/publications/eea_report_2009_9*
[6]European Environmental Agency (2008) Better management of municipal waste will reduce greenhouse gas emissions. http://www.eea.europa.eu/publications/briefing_2008_1
[7]CalRecycle. 2012. CalRecycle Review of Waste-to-Energy and Avoided Landfill Methane Emissions. Available at: http://www.calrecycle.ca.gov/Actions/PublicNoticeDetail.aspx?id=735&aiid=689
[7]Center for American Progress (2013) Energy from Waste Can Help Curb Greenhouse Gas Emissions http://www.americanprogress.org/wp-content/uploads/2013/04/EnergyFromWaste-PDF1.pdf
[8]Third Way (2016) *Getting it Right: The Next Fifteen Years of Energy*. http://www.thirdway.org/report/getting-it-right-the-next-fifteen-years-of-energy

What the Authorities Say

EPA Clean Power Plan[1]

WTE facilities may generate tradable emission rate credits (ERCs) under a rate-based state plan to reduce GHG emissions from the power sector.

Is it Better to Bury or Burn?[2]

"WTE appears to be a better option than landfill gas to energy. If the goal is greenhouse gas reduction, then WTE should be considered as an option under U.S. renewable energy policies."

Intergovernmental Panel on Climate Change (IPCC)[3]

WTE is identified as a "key mitigation measure" in IPCC, "Climate Change 2007: Synthesis Report"

World Economic Forum[4]

WTE was recognized as a key emerging large-scale clean energy sector in a low-carbon economy along with onshore and offshore wind, solar, cellulosic ethanol and geothermal power.

Center for American Progress[7]

"In order to reduce greenhouse-gas emissions, garbage must be diverted from landfills and sent to EfW facilities after significant recycling and composting efforts are accomplished."

Third Way[8]

"A mass-based [Clean Power Plan] approach allows states to support a wider range of carbon reducing activities, [including] existing carbon negative waste-to-energy generation."

WTE IS A RENEWABLE RESOURCE

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.

Federal Statutes and Policies Establishing WTE as Renewable (as of 10/1/18)

EPA's Clean Power Plan

Balanced Budget Act of 2018

Consolidated Appropriations Act, 2016

Tax Increase Prevention Act of 2014

American Taxpayer Relief Act of 2012

American Recovery and Reinvestment Act of 2009

Emergency Economic Stabilization Act of 2008

Tax Relief and Healthcare Act of 2006

Energy Policy Act of 2005

American Jobs Creation Act of 2004

Biomass Research and Development Act of 2000

Public Utility Regulatory Policies Act (PURPA) of 1978

Federal Power Act

Pacific Northwest Power Planning and Conservation Act

Internal Revenue Code (Section 45)

Executive Orders 13123, 13423, 13514, and 13693

Presidential Memorandum on Federal Leadership on Energy Management (12/5/13)

Federal Energy Regulatory Commissions Regulations (18 CFR.Ch. I, 4/96 Edition, Sec. 292.204)

States Defining Waste-to-Energy as Renewable in State Law (as of 10/1/18)

Alabama	Maryland	Oregon
Arizona	Massachusetts	Pennsylvania
Arkansas	Michigan	Puerto Rico
Colorado	Minnesota	South Carolina
Connecticut	Missouri	South Dakota
Dist. of Columbia	Montana	Utah
Florida	Nevada	Virginia
Hawaii	New Jersey	Washington
Indiana	New York	West Virginia
Iowa	N. Mariana Islands	Wisconsin
Louisiana	Ohio	
Maine	Oklahoma	

WTE HAS A SUPERIOR EMISSIONS PROFILE

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)

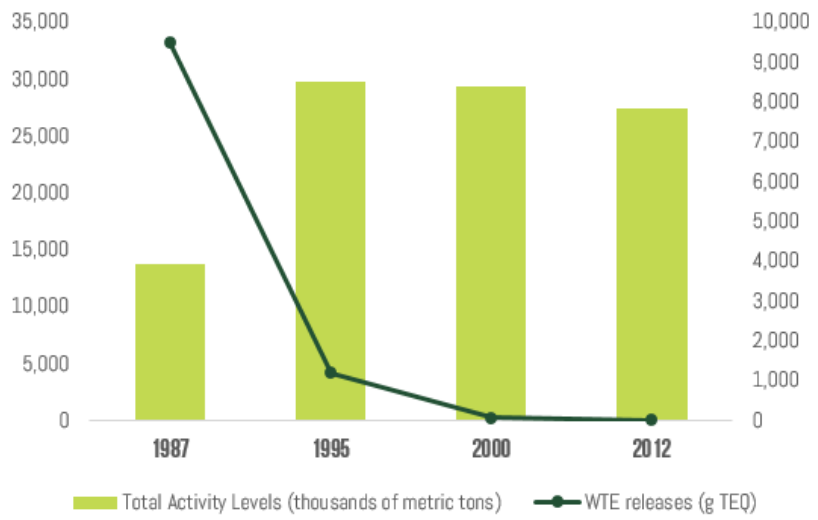
Columbia University Conducts Research on the Modern Day Dioxin Emissions

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

WTE Throughput vs. Emissions (1987-2012)



	1987	1995	2000	2012
Total Activity Levels (thousands of metric tons)	13,700	29,800	29,400	27,400
WTE releases (g TEQ)	9510	1200	77	3.4

POLLUTANT	1990 EMISSIONS (TPY)	2005 EMISSIONS (TPY)	PERCENT REDUCTION
CDD/CDF, TEQ BASIS*	4,400	15	-99.7%
MERCURY	57	2	-96.0%
CADMIUM	10	0.4	-95.8%
LEAD	170	6	-96.8%
PARTICULATE MATTER	18,600	780	-95.8%
HCl	57,400	3,200	-94.4%
SO_2	38,300	4,600	-88.0%
NO_x	64,900	49,500	-23.7%

NATIONAL ECONOMIC BENEFITS OF WTE

By Eileen Brettler Berenyi, PhD, Governmental Advisory Associates, Inc.

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

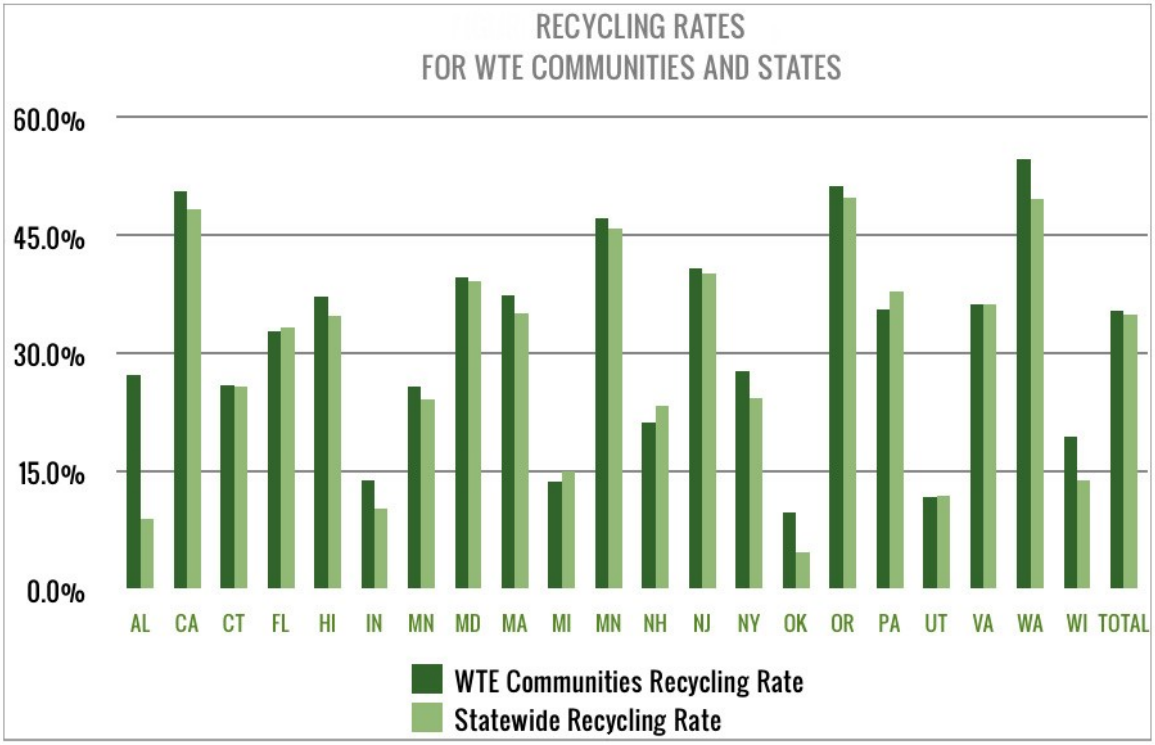
The waste-to-energy sector provides significant economic value to the communities it services. In addition to the revenues generated by the sector, waste-to-energy facilities provide stable, long-term, well-paying jobs, while pumping dollars into local economies through the purchase of local goods and 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:

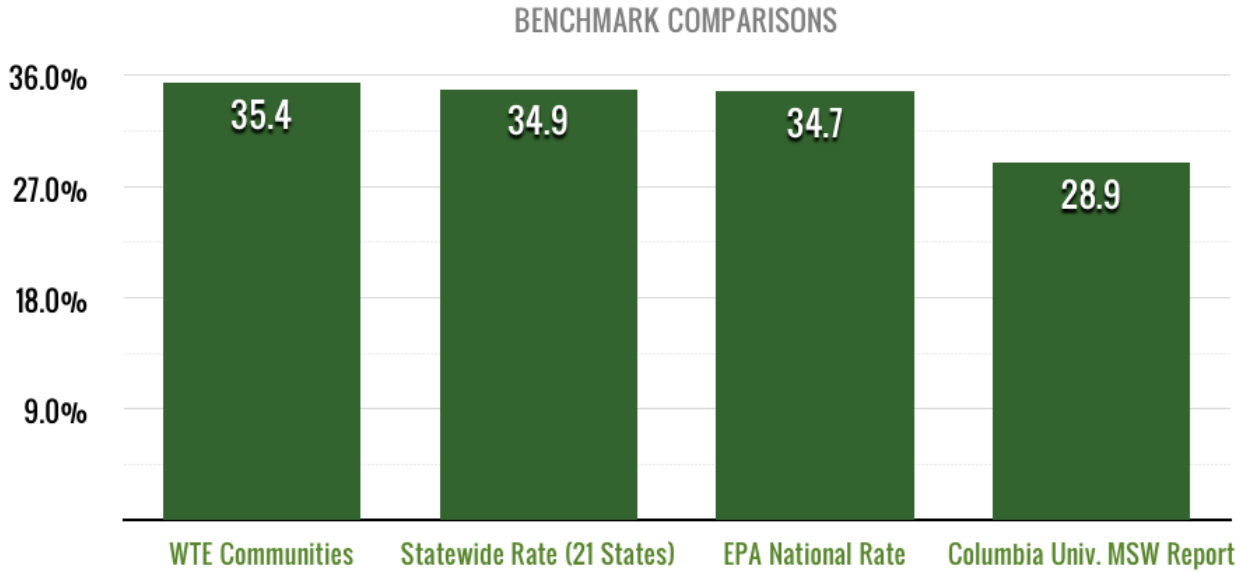
http://energyrecoverycouncil.org/resources

WTE AND RECYCLING: A SYMBIOTIC RELATIONSHIP

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.



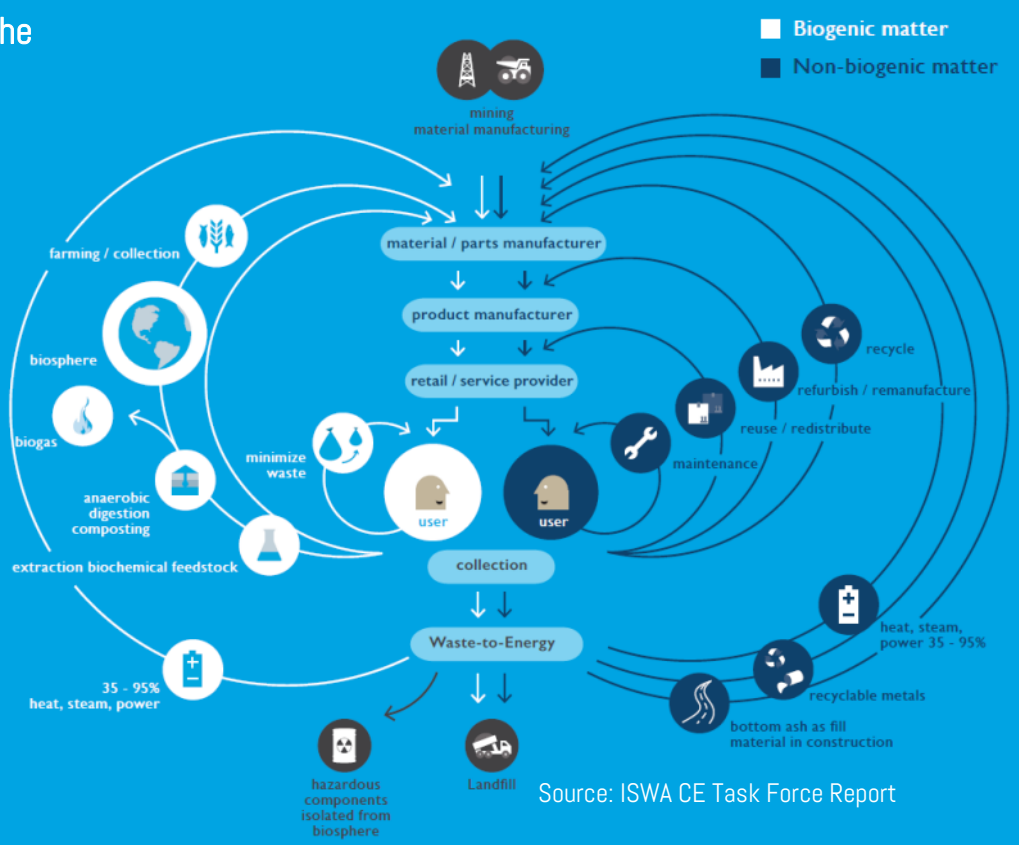
Berenyi also found that state solid waste policies, not a community's reliance on WTE for disposal, determines local recycling behavior and rates.

WTE IN THE CIRCULAR ECONOMY

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.



Source: ISWA CE Task Force Report

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

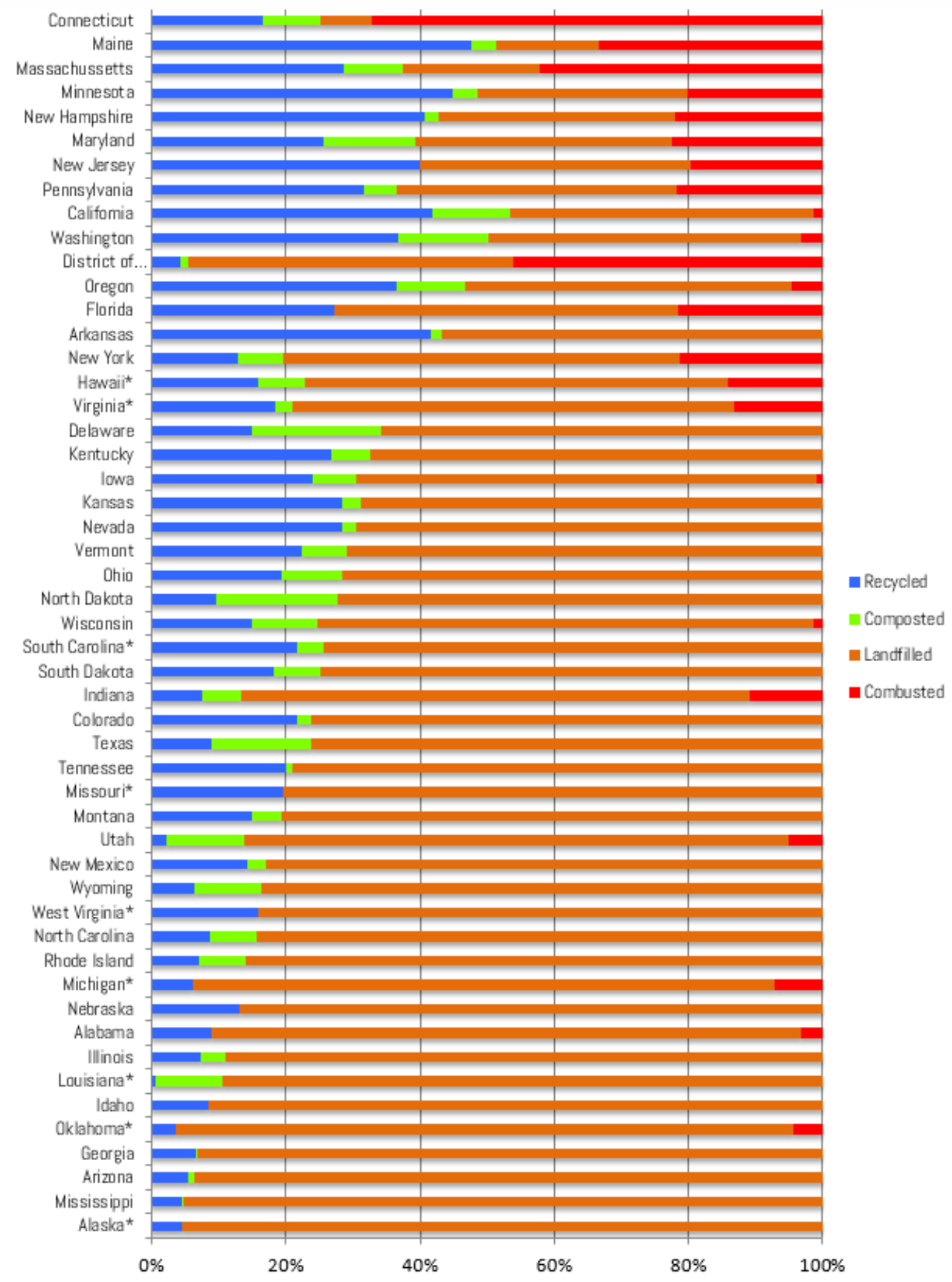
(EU-wide initiative to achieve the following goals **by 2030**)

Recycle **65%** of all *municipal* waste

Recycle **75%** of all *packaging* waste

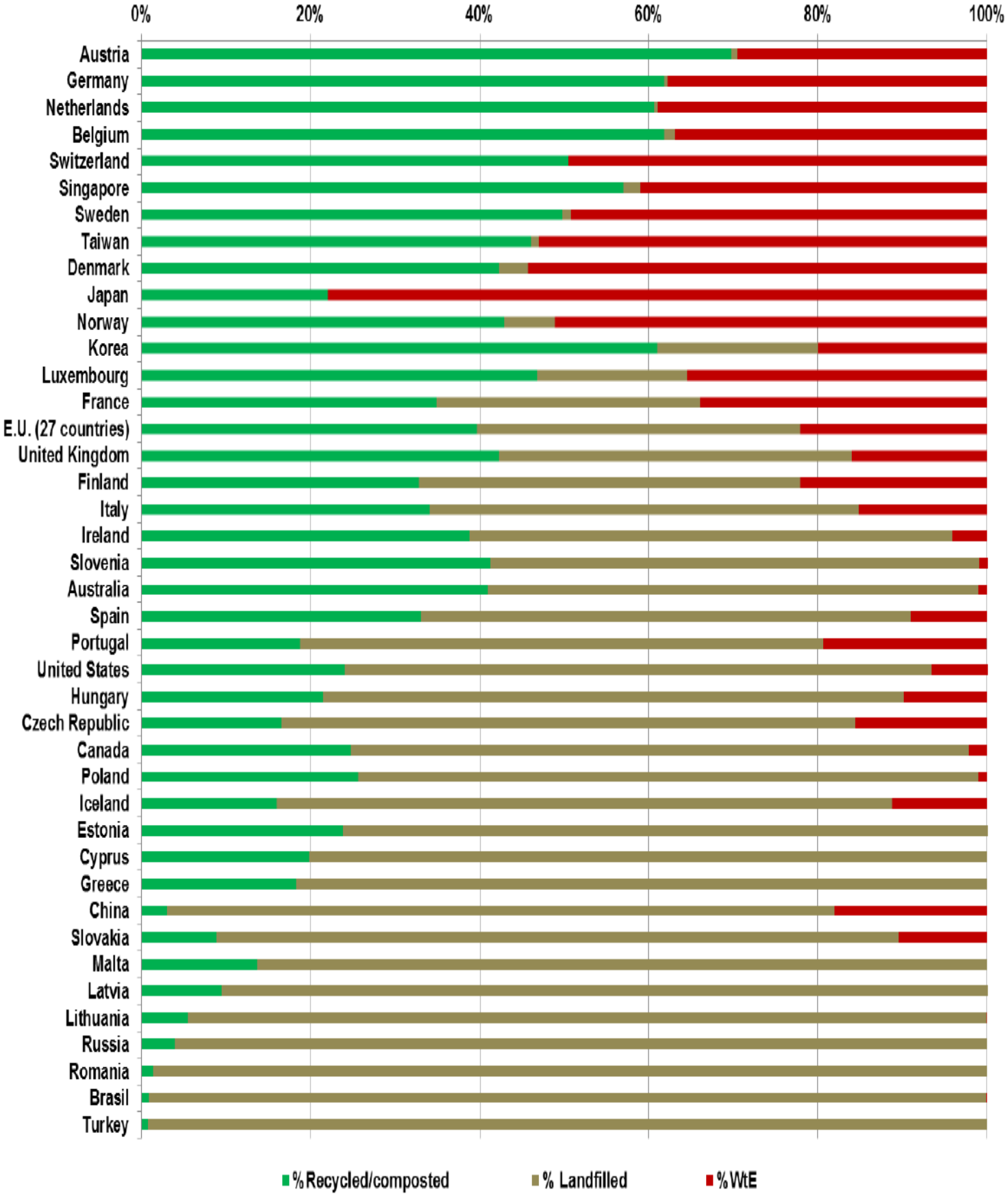
Send **no more than 10%** of waste to landfill

SUSTAINABLE WASTE MANAGEMENT IN THE U.S.



The "ladder" of sustainable waste management in the U.S.
(N.J. Themelis and Dolly Shin, "MSW Management", Nov-Dec 2015)

SUSTAINABLE WASTE MANAGEMENT IN THE WORLD



Source: Global WTERT Council

WTE DIRECTORY: KEY TERMS

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.

ALABAMA

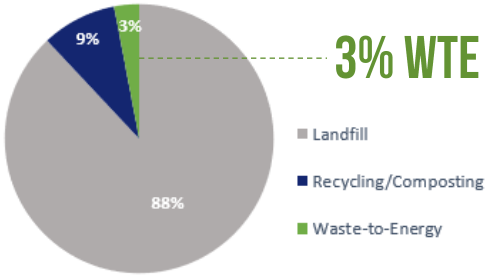
Waste-To-Energy State Stats — 1 Facility

WTE Capacity

690 TONS /DAY — WASTE CAPACITY

178,620 LBS/HR — STEAM CAPACITY

MSW Breakdown



JOBS

$47.1 MILLION
TOTAL ECONOMIC OUTPUT

38 JOBS IN WTE FACILITIES
109 TOTAL JOBS

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

5251 Triana Blvd, Huntsville, AL 35805

www.swdahsv.org I www.covanta.com

CALIFORNIA

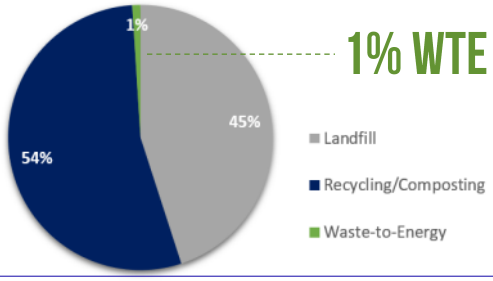
Waste-To-Energy State Stats — 2 Facilities

WTE Capacity

2,180 TONS /DAY — WASTE CAPACITY

58.4 MW — ELECTRICITY CAPACITY

MSW Breakdown



JOBS

$139.8 MILLION
TOTAL ECONOMIC OUTPUT

146 JOBS IN WTE FACILITIES
503 TOTAL JOBS

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 I 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 I www.covanta.com

CONNECTICUT

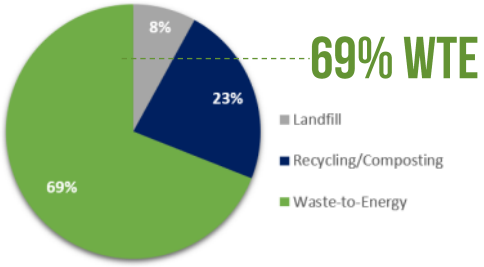
Waste-To-Energy State Stats — 5 Facilities

WTE Capacity

6,939 TONS /DAY — WASTE CAPACITY

184.3 MW — ELECTRICITY CAPACITY

MSW Breakdown



JOBS

$384 MILLION
TOTAL ECONOMIC OUTPUT

323 JOBS IN WTE FACILITIES
950 TOTAL JOBS

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.brrfoc.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

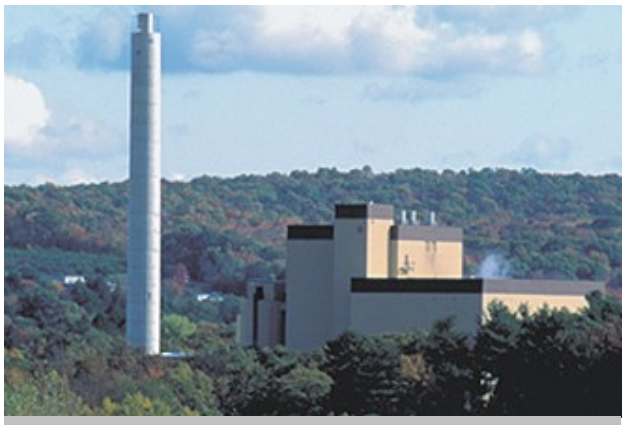
CONNECTICUT

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



132 Military Highway, Preston CT 06365

www.covanta.com

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

6 Howard Avenue, Bridgeport, CT 06605

www.wtienergy.com

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

425 South Burnham Highway, Lisbon, CT

www.wtienergy.com I www.ecrra.org

FLORIDA

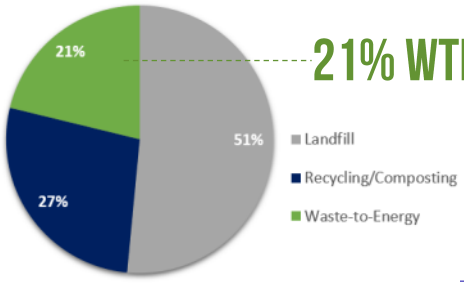
Waste-To-Energy State Stats — 11 Facilities

WTE Capacity

20,114 TONS /DAY — WASTE CAPACITY

560 MW — ELECTRICITY CAPACITY

MSW Breakdown



JOBS

$997.5 MILLION
TOTAL ECONOMIC OUTPUT

819 JOBS IN WTE FACILITIES
2,371 TOTAL JOBS

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

3830 Rogers Industrial Park Rd. Okahumpka, FL 34762

www.covanta.com

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

10500 Buckingham Rd., Ft. Myers, FL 33905

www.lee.gov/solidwaste I www.covanta.com

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

107 North 34th St., Tampa, FL 33605

www.wtienergy.com I www.tampagov.net/solid-waste/info/mckay-bay/

FLORIDA

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

6990 NW 97th Ave, Miami FL 33178

www.covanta.com; www.miamidAde.gov/publicworks/resources-recovery.asp

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

6255 North Jog Rd., West Palm Beach, FL, 33412

www.swa.org | www.covanta.com

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

6751 North Jog Rd., West Palm Beach, FL 33412

www.swa.org | www.covanta.com

FLORIDA

Pasco County Solid Waste Resource Recovery Facility

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

14230 Hays Road, Spring Hill, FL 34610

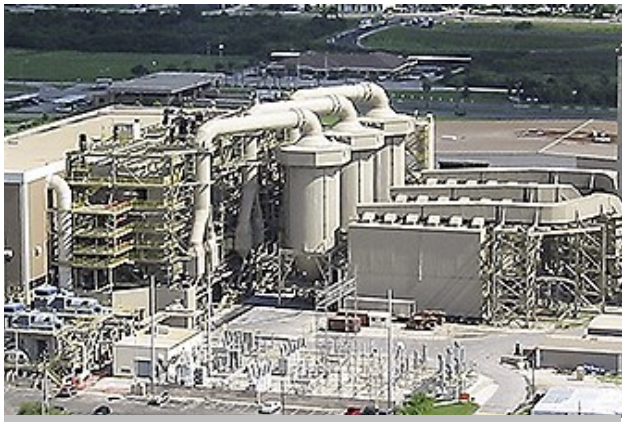
www.covanta.com

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



3001 110th Ave, North, St. Petersburg, FL 33716

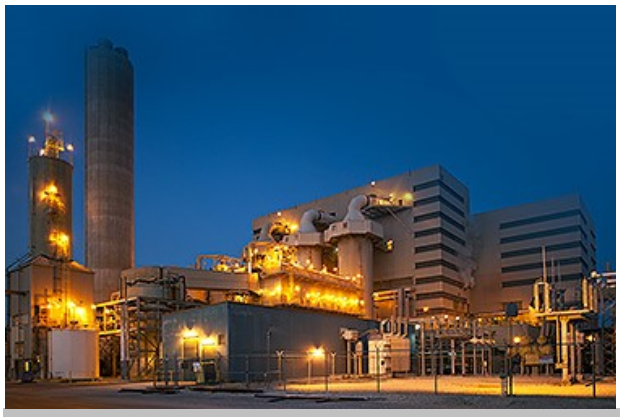
www.pinellascounty.org/solidwaste/wte.htm I www.covanta.com

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



107 South State Road 7, Ft. Lauderdale, FL 33314

www.wtienergy.com

HAWAII

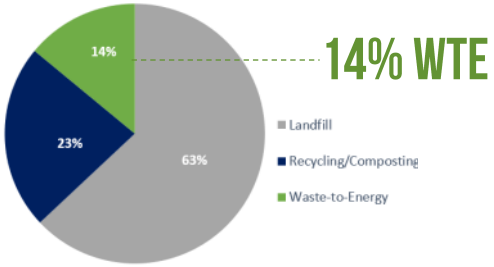
Waste-To-Energy State Stats — 1 Facility

WTE Capacity

3,000 TONS /DAY — WASTE CAPACITY

90 MW — ELECTRICITY CAPACITY

MSW Breakdown



JOBS

$143.4 MILLION
TOTAL ECONOMIC OUTPUT

161 JOBS IN WTE FACILITIES
324 TOTAL JOBS

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 I www.opala.org

INDIANA

Waste-To-Energy State Stats — 1 Facility

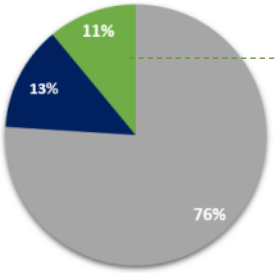
WTE Capacity

2,362 TONS/DAY — WASTE CAPACITY

558,000 LBS/HR — STEAM CAPACITY

6.5 MW — ELECTRICITY CAPACITY

MSW Breakdown



11% WTE

JOBS

$74.9 MILLION
TOTAL ECONOMIC OUTPUT

74 JOBS IN WTE FACILITIES
197 TOTAL JOBS

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

IOWA

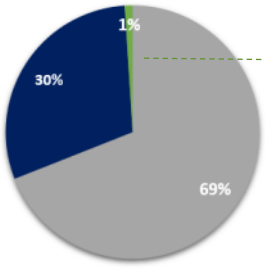
Waste-To-Energy State Stats — 1 Facility

WTE Capacity

175 TONS/DAY — WASTE CAPACITY

4 MW — ELECTRICITY CAPACITY

MSW Breakdown



1% WTE

JOBS

$7.3 MILLION
TOTAL ECONOMIC OUTPUT

15 JOBS IN WTE FACILITIES
32 TOTAL JOBS

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

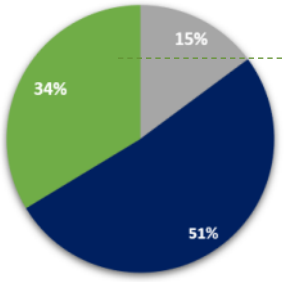
Waste-To-Energy State Stats — 3 Facilities

WTE Capacity

1,470 TONS /DAY — WASTE CAPACITY

44.7 MW — ELECTRICITY CAPACITY

MSW Breakdown



34% WTE

- Landfill
- Recycling/Composting
- Waste-to-Energy

JOBS

$146.6 MILLION
TOTAL ECONOMIC OUTPUT

153 JOBS IN WTE FACILITIES
615 TOTAL JOBS

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 I www.mercmaine.org

MARYLAND

Waste-To-Energy State Stats — 2 Facilities

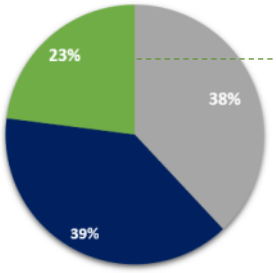
WTE Capacity

4,050 TONS/DAY — WASTE CAPACITY

170,000 LBS/HR — STEAM CAPACITY

123.4 MW — ELECTRICITY CAPACITY

MSW Breakdown



23% WTE

JOBS

$183.4 MILLION
TOTAL ECONOMIC OUTPUT

160 JOBS IN WTE FACILITIES

458 TOTAL JOBS

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 I 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

1801 Annapolis Rd., Baltimore, MD 21230

www.wtienergy.com

MASSACHUSETTS

Waste-To-Energy State Stats — 7 Facilities

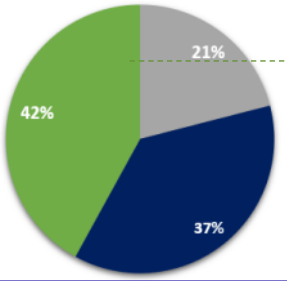
WTE Capacity

9,490 TONS/DAY — WASTE CAPACITY

68,000 LBS/HR — STEAM CAPACITY

256.9 MW ELECTRICITY CAPACITY

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

100 Recovery Way, Haverhill, MA 01385

www.covanta.com

MASSACHUSETTS

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

188 M Street Extension, Agawam, MA 01001

www.covanta.com

SEMASS 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

141 Cranberry Highway, West Wareham, MA 02576

www.covanta.com

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

331 Southwest Cutoff Rd., Millbury, MA 01527

www.wtienergy.com

MASSACHUSETTS

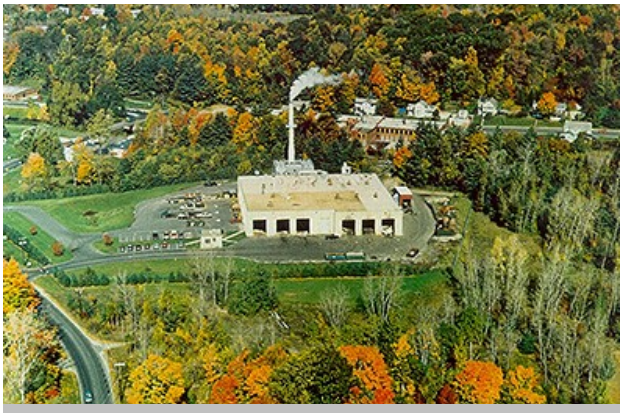
Pittsfield Resource Recovery Facility

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



500 Hubbard Ave., Pittsfield, MA 01201

www.covanta.com

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

285 Holt Rd., North Andover, MA 01845

www.wtienergy.com

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

100 Salem Turnpike, Saugus, MA 01906

www.wtienergy.com

MICHIGAN

Waste-To-Energy State Stats — 2 Facilities

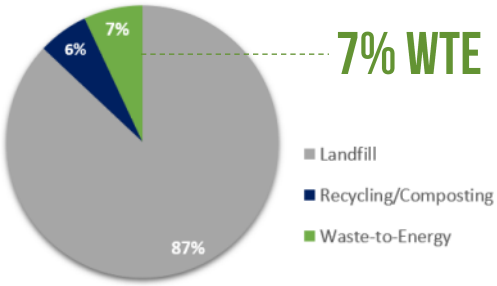
WTE Capacity

3,925 TONS /DAY — WASTE CAPACITY

84.8 MW — ELECTRICITY CAPACITY

228,300 LBS/HR — STEAM CAPACITY

MSW Breakdown



JOBS

$185.3 MILLION
TOTAL ECONOMIC OUTPUT

196 JOBS IN WTE FACILITIES
735 TOTAL JOBS

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

5700 Russell St., Detroit, MI 48211

www.detroitrenewablepower.com I www.gdrra.org

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

950 Market Ave. SW, Grand Rapids, MI 49503

www.accesskent.com/Departments/DPW/waste-to-energy.htm I www.covanta.com

MINNESOTA

Waste-To-Energy State Stats — 8 Facilities

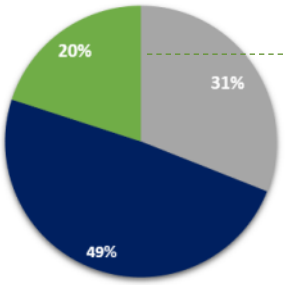
WTE Capacity

4,572 TONS /DAY — WASTE CAPACITY

123.2 MW — ELECTRICITY CAPACITY

168,000 LBS/HR — STEAM CAPACITY

MSW Breakdown



20% WTE

JOBS

$193.1 MILLION
TOTAL ECONOMIC OUTPUT

322 JOBS IN WTE FACILITIES
888 TOTAL JOBS

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

MINNESOTA

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

301 Silver Creek Rd. NE, Rochester, MN 55906

www.co.olmsted.mn.us

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

201 6th Ave. NE, Perham, MN 56573

www.co.otter-tail.mn.us/prairielakes

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

708 8th St. NW, Fosston, MN 56542

www.co.polk.mn.us

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

2115 Jefferson St., Alexandria, MN 56308

www.popedouglasrecycle.com

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

801 E. 5th St., Red Wing, MN 55066

www.xcelenergy.com

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

1040 Summit Ave., Mankato, MN 56001

www.xcelenergy.com

NEW HAMPSHIRE

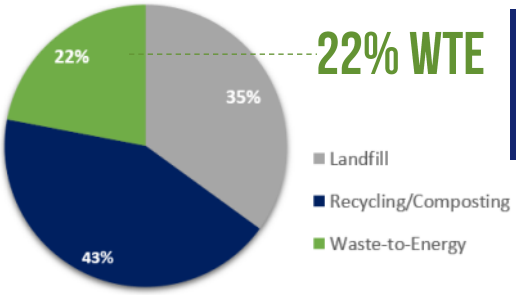
Waste-To-Energy State Stats — 1 Facility

WTE Capacity

500 TONS /DAY — WASTE CAPACITY

14 MW — ELECTRICITY CAPACITY

MSW Breakdown



JOBS

$37.4 MILLION
TOTAL ECONOMIC OUTPUT

38 JOBS IN WTE FACILITIES
174 TOTAL JOBS

Wheelabrator Concord

Penacook, NH // Merrimack County
2nd US Congressional District

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

Started:	1989
Technology:	Mass Burn
Capacity (MSW):	500 tons per day
Boilers:	2
Elec. Capacity:	14 MW
People Served:	169,000

11 Whitney Rd., Penacook, NH 03303

www.wtienergy.com

Center for American Progress

Energy from Waste Can Help Curb Greenhouse Gas Emissions

Matt Kasper
April 17, 2013

[Excerpt] 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.

Read the full article: http://www.americanprogress.org/issues/green/report/2013/04/17/60712/energy-from-waste-can-help-curb-greenhouse-gas-emissions

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

NEW JERSEY

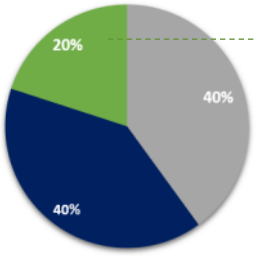
Waste-To-Energy State Stats — 5 Facilities

WTE Capacity

5,717 TONS /DAY — WASTE CAPACITY

169.6 MW — ELECTRICITY CAPACITY

MSW Breakdown



20% WTE

JOBS

$496.9 MILLION
TOTAL ECONOMIC OUTPUT

274 JOBS IN WTE FACILITIES
822 TOTAL JOBS

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

NEW JERSEY

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

183 Raymond Blvd., Newark, NJ 01705

www.covanta.com

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

1499 Rt. 1 North, Rahway, NJ 07065

www.unioncountyutilitiesauthority.org I www.covanta.com

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

600 US Route 130, Westville, NJ 08093

www.xcelenergy.com

NEW YORK

Waste-To-Energy State Stats — 10 Facilities

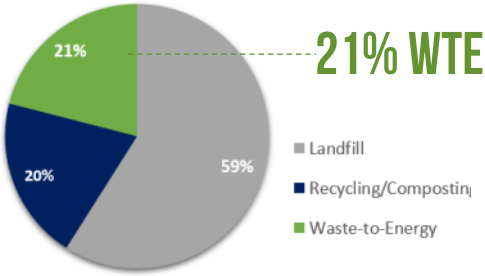
WTE Capacity

11,131 TONS /DAY — WASTE CAPACITY

285.1 MW — ELECTRICITY CAPACITY

548,000 LBS/HR — STEAM CAPACITY

MSW Breakdown



JOBS

$726.8 MILLION
TOTAL ECONOMIC OUTPUT

522 JOBS IN WTE FACILITIES
1,377 TOTAL JOBS

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

98 Sand Dock Rd., Poughkeepsie, NY 12601

www.dcrra.org I www.wtienergy.com

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

99 Town Line Rd., East Northport, NY 11731

www.covanta.com

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

4001 Veterans Memorial Hwy, Ronkonkoma, NY 11779

www.toirra.com I www.covanta.com

NEW YORK

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

100 Energy Blvd. at 56th St., Niagara Falls, NY 14303

www.covanta.com

Onodaga Resource Recovery Facility

Jamesville, NY // Onodaga 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

5801 Rock Cut Rd., Jamesville, NY 13078

www.covanta.com | www.ocrra.org

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

2801 State Route 481, Fulton, NY 13069

www.oswegocounty.com/dsw

NEW YORK

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

93 River Street, Hudson Falls, NY 12839

www.wtienergy.com

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

One Charles Point Ave, Peekskill, NY 10566

www.wtienergy.com

NAWTEC 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

OKLAHOMA

Waste-To-Energy State Stats — 1 Facility

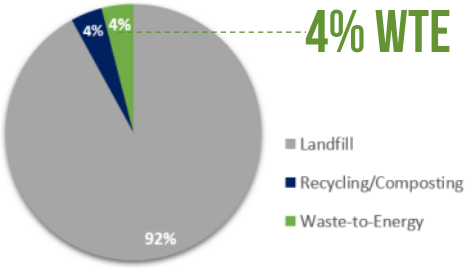
WTE Capacity

1,125 TONS /DAY — WASTE CAPACITY

16.8 MW — ELECTRICITY CAPACITY

80,000 LBS/HR — STEAM CAPACITY

MSW Breakdown



JOBS

$31.8 MILLION
TOTAL ECONOMIC OUTPUT

38 JOBS IN WTE FACILITIES
116 TOTAL JOBS

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

OREGON

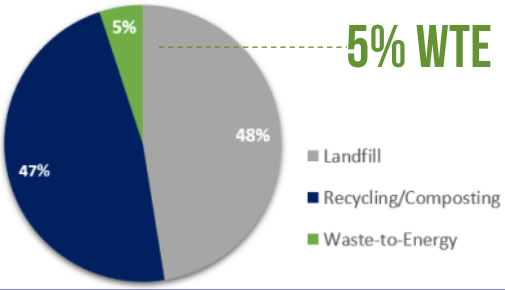
Waste-To-Energy State Stats — 1 Facility

WTE Capacity

550 TONS /DAY — WASTE CAPACITY

13.1 MW — ELECTRICITY CAPACITY

MSW Breakdown



JOBS

$20.7 MILLION
TOTAL ECONOMIC OUTPUT

42 JOBS IN WTE FACILITIES
123 TOTAL JOBS

Marion County Solid Waste-to-Energy Facility

Brooks, OR // Marion County
5th US Congressional District

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

Started:	1987
Technology:	Mass Burn
Capacity (MSW):	550 tons per day
Boilers:	2
Elec. Capacity:	13.1 MW
People served:	314,886

4850 Brooklake Road, NE, Brooks, OR 97305

www.covanta.com

third way
fresh thinking

Third Way's Report recommends a mass-based approach to leverage a wider range of carbon-reducing technologies, including WTE

Getting it Right: The Next Fifteen Years of Energy

By Matt Goldberg

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

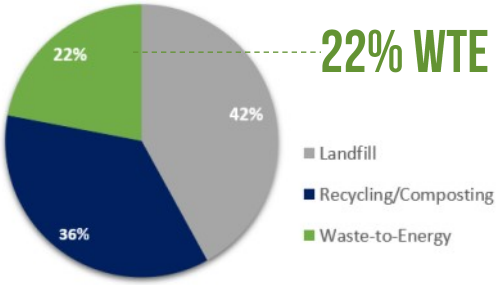
Waste-To-Energy State Stats — 6 Facilities

WTE Capacity

9,560 TONS /DAY — WASTE CAPACITY

267.9 MW — ELECTRICITY CAPACITY

MSW Breakdown



JOBS

$586.0 MILLION
TOTAL ECONOMIC OUTPUT

354 JOBS IN WTE FACILITIES
1,114 TOTAL JOBS

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., Conschohocken, 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

PENNSYLVANIA

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

1911 River Rd., Bainbridge, PA 17502

www.lcswma.org I www.covanta.com

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

1670 South 19th St., Harrisburg, PA 17104

www.lcswma.org/srmc I www.covanta.com

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

1201 New Ford Mill Road, Morrisville, PA 19067

www.wtienergy.com

PENNSYLVANIA

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

VIRGINIA

Waste-To-Energy State Stats — 4 Facilities

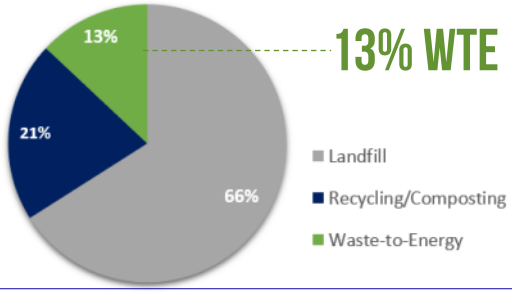
WTE Capacity

6,215 TONS/DAY — WASTE CAPACITY

388,000 LBS/HR — STEAM CAPACITY

175 MW — ELECTRICITY CAPACITY

MSW Breakdown



13% WTE

JOBS

$423.6MILLION
TOTAL ECONOMIC OUTPUT

356 JOBS IN WTE FACILITIES
1,010 TOTAL JOBS

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

VIRGINIA

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

50 Wythe Creek Rd., Hampton, VA 23666

www.hampton.gov

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

9898 Furnace Rd., Lorton, VA 22079

www.covanta.com

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

4 Victory Blvd., Portsmouth, VA 23702

www.wtienergy.com

WASHINGTON

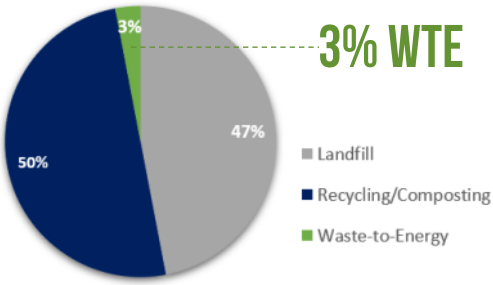
Waste-To-Energy State Stats — 1 Facility

WTE Capacity

800 TONS /DAY — WASTE CAPACITY

26 MW — ELECTRICITY CAPACITY

MSW Breakdown



JOBS

$74.9 MILLION
TOTAL ECONOMIC OUTPUT

40 JOBS IN WTE FACILITIES
123 TOTAL JOBS

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

WISCONSIN

Waste-To-Energy State Stats — 2 Facilities

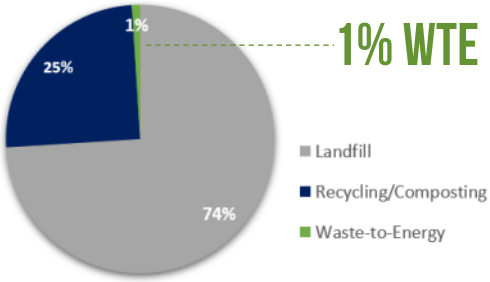
WTE Capacity

490 TONS /DAY — WASTE CAPACITY

30 MW — ELECTRICITY CAPACITY

10,000 LBS/HR — STEAM CAPACITY

MSW Breakdown



JOBS

$74.9 MILLION
TOTAL ECONOMIC OUTPUT

40 JOBS IN WTE FACILITIES
119 TOTAL JOBS

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
Elec. 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
Elec. Capacity:	28 MW
People Served:	250,000

200 Bainbridge St., La Crosse, WI 54601

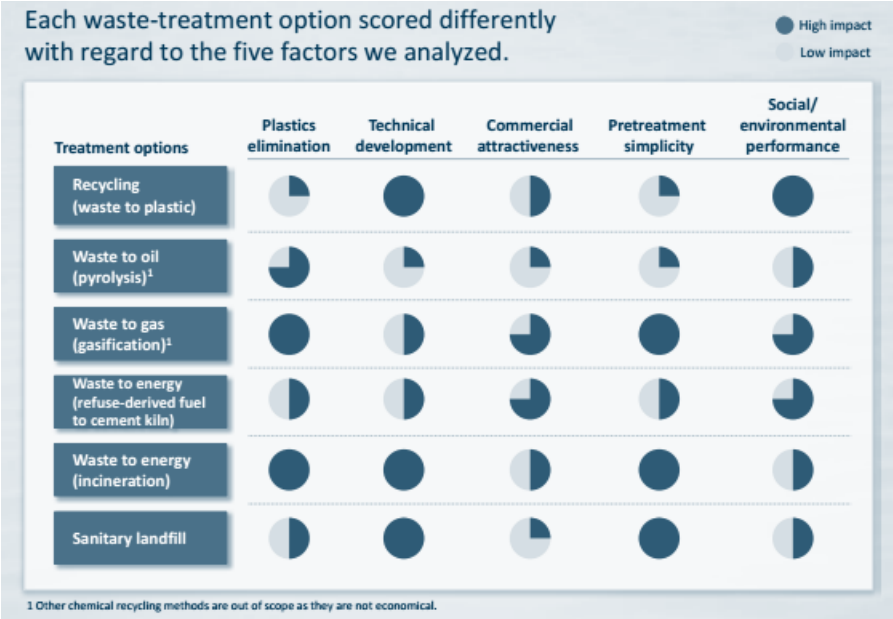
www.xcelenergy.com

OCEAN CONSERVANCY: "STEMMING THE TIDE"

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, offtake 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



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.

www.energyrecoverycouncil.org

@ERC_WTE

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