

Waste Business Monitor

The only source of "real time" trend data analysing global waste plant developments

AcuComm

Waste > Renewables > Energy > Profit

ALL DATA CURRENT AT

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In this month's report...

The latest waste plant developments in December 2015

- Latest Monthly Projects by Facility Type and Feedstock
- Latest Monthly Capacity by Facility Type and Feedstock
- Latest Power Generation Projects Listed by Facility Type and Feedstock
- Latest Country Focus Top Ten Countries with number and value of projects listed
- Completion Date Focus

 **ISWA**
International Solid Waste Association

Essential for waste equipment manufacturers, operators and service companies

Welcome to Waste Business Monitor.

Welcome to your complimentary issue of AcuComm's Waste Business Monitor (WBM).

WBM provides an ongoing and comprehensive analysis of current projects in the global waste industry, enabling you to establish the level of activity in the different sectors of the waste industry around the world. The data in is taken from AcuComm's Business Database. This is a database of projects compiled and maintained by us on a daily basis. The information in it – and therefore in Waste Business Monitor – is not readily available from any other source.

WBM is organised in the following sections:

The first section examines new projects reported in the latest month. It looks at the overall number and value of these, and then divides them in two ways. Each project is allocated a principal facility type, such as anaerobic digestion, gasification plant or WtE incineration plant.

Secondly, each project is allocated a principal feedstock type, such as municipal solid waste, plant biomass or food for example. Then, the waste capacity and power generation capacity of each project is examined. After this, we look at which countries are most active, and when projects are reported as being likely to complete.

I hope Waste Business Monitor is useful to you. If you have any questions or queries, or if you have a project which you would like to see included in our Business Database – free of charge – then please do get in touch

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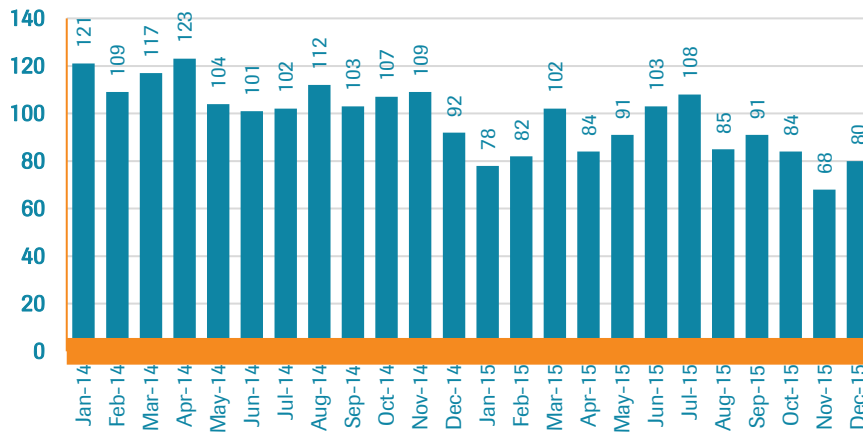
Projects This Month: December 2015

Overview

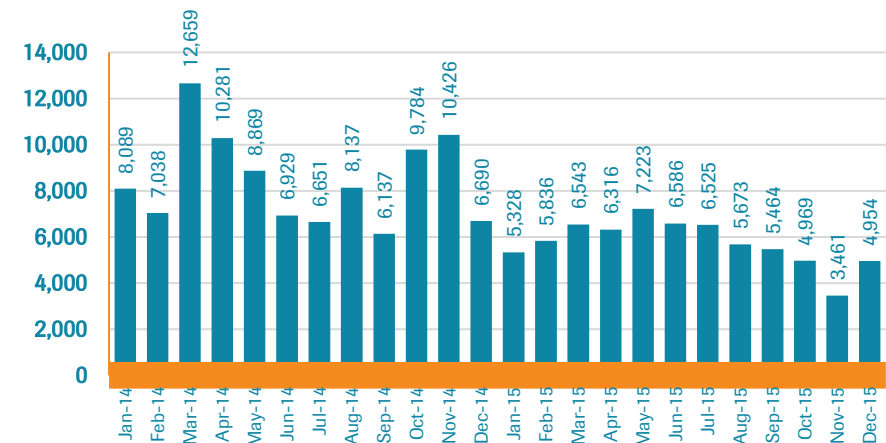
AcuComm reported on 80 new/updated waste projects in December 2015. This takes the annual number (since January 2015) to 1,056, and the total overall since January 2014 to 2,356. The database as a whole contains 3,725 active project investments.

Each new waste project represents on-going investment of an average of around US\$65 million.

Number of New Projects by Month



Estimated Total Value of New Projects (US\$m)



The total estimated value of these new projects is US\$4,954 million. This takes the total estimated value of projects reported since January 2015 to US\$68,878 million. The average estimated value of a waste project over this period is US\$65 million.



Incineration with energy recovery projects form the largest number in December 2015, accounting for 19 or 23.8% of the total. This was followed by recycling projects (17 projects, or 21.3%) and biogas (13 projects, or 16.3%).



Incineration with energy recovery is the leading facility type by estimated value, at US\$2,227 million, or 44.9% of the total. This was closely followed by biofuel with US\$745 million, or 15.0% of the total.

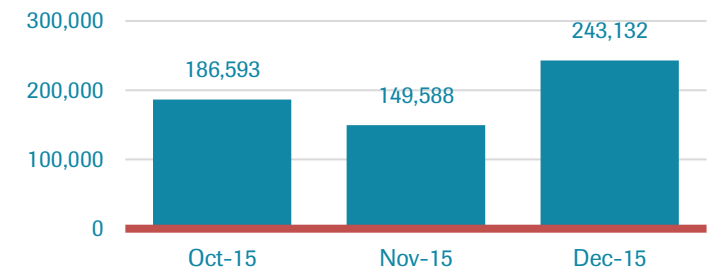
Quarterly Project Data Comparison

Key Indicators for October 2015 to December 2015

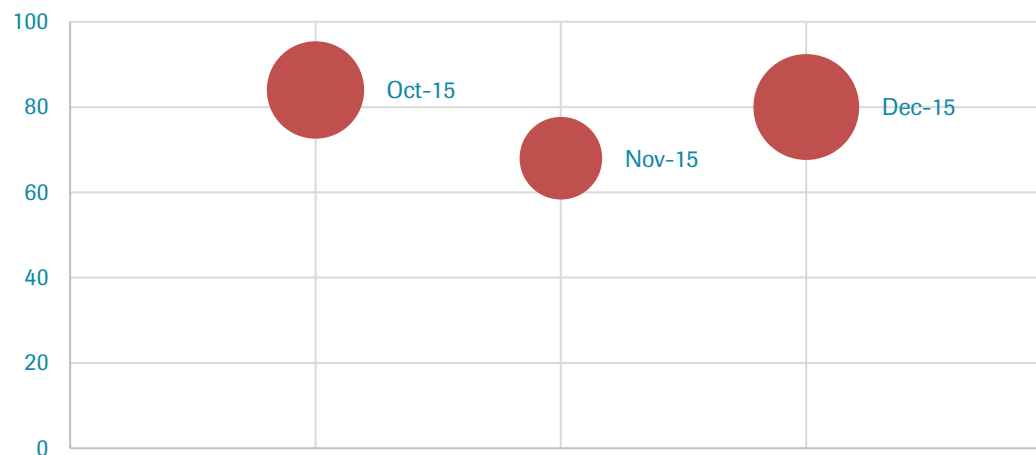
	Oct-15	Nov-15	Dec-15	Quarterly Total
Number of new projects	84	68	80	232
Total estimated value (US\$ millions)	4,969	3,461	4,954	13,384
Average value (US\$ millions)	59	51	62	58
Estimated waste capacity (tonnes)	15,673,848	10,171,951	19,450,596	45,296,395
Average annual capacity per project (tonnes)	186,593	149,588	243,132	195,243
Estimated power generation (MW)	1,087	633	1,223	2,943
Average MW per project	13	9	15	13

This page compares data on projects reported in the current month, compared with the previous two months. This provides a comparison of the most recent data, and also a quarterly total. The size of the circles in the bottom left graph represents the total estimated project values, as reported in the table on this page.

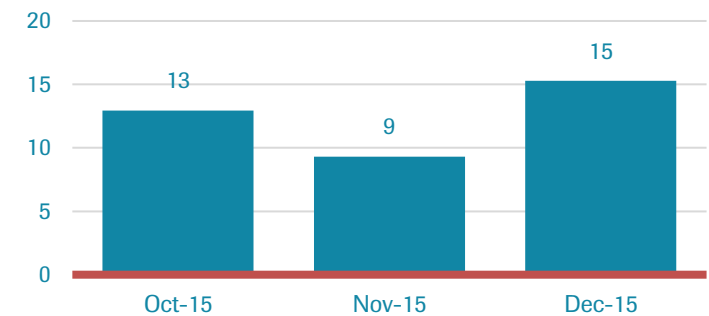
Average annual capacity per project (tonnes)



Projects by Number and Estimated US\$ Value



Average MW per project



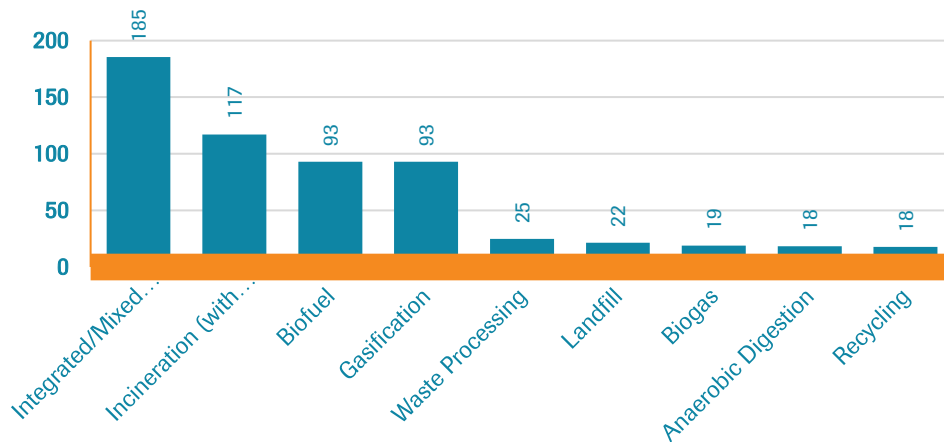
Latest Monthly Projects by Facility Type (December 2015)

	Projects	With Value (US\$m)	Reported Value (US\$m)	Total Estimated Value (US\$m)	Average value
Anaerobic Digestion	7	1	29	127	18
Biofuel	8	2	72	745	93
Biogas	13	4	27	247	19
Gasification	2	1	2	186	93
Incineration (energy recovery)	19	13	1,530	2,227	117
Incineration (no energy recovery)	0	0	0	0	-
Integrated Facilities (IWMMF)	1	0	0	185	185
Landfill	5	0	0	108	22
MBT	0	0	0	0	-
Recycling	17	5	60	301	18
Waste Processing	2	1	5	50	25
Others	6	0	0	779	130
Total	80	27	1,725	4,954	62

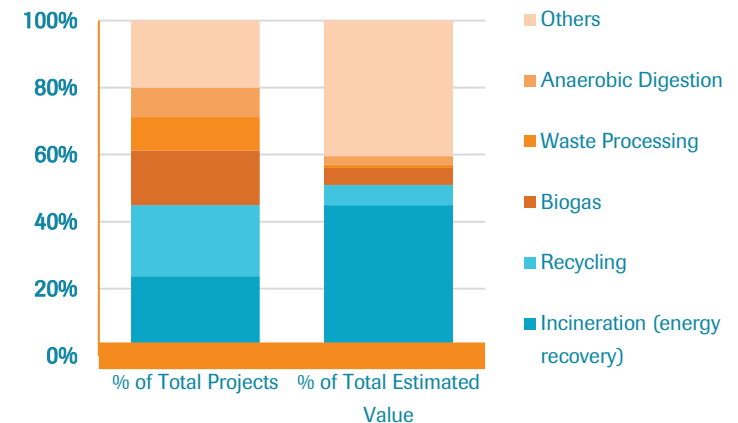
Latest Monthly Projects by Facility Type % of Total (December 2015)

	% of Total Projects	% of Total Estimated Value
Anaerobic Digestion	8.8	2.6
Biofuel	10.0	15.0
Biogas	16.3	5.0
Gasification	2.5	3.8
Incineration (energy recovery)	23.8	44.9
Incineration (no energy recovery)	0.0	0.0
Integrated Facilities (IWMMF)	1.3	3.7
Landfill	6.3	2.2
MBT	0.0	0.0
Recycling	21.3	6.1
Waste Processing	2.5	1.0
Others	7.5	15.7
Total	100.0	100.0

Average Value of Projects, Dec 2015 (US\$m)



Projects By Facility Type, Dec 2015



In terms of waste feedstock type, wood was the leading category in December 2015. Wood accounted for 15 projects (18.8% of the total) with an estimated value of US\$1,728 million (34.9% of the total).



MSW was the other principal feedstock in December 2015. This also accounted for 15 projects, equal to US\$942 million or 19.0% of the estimated value.



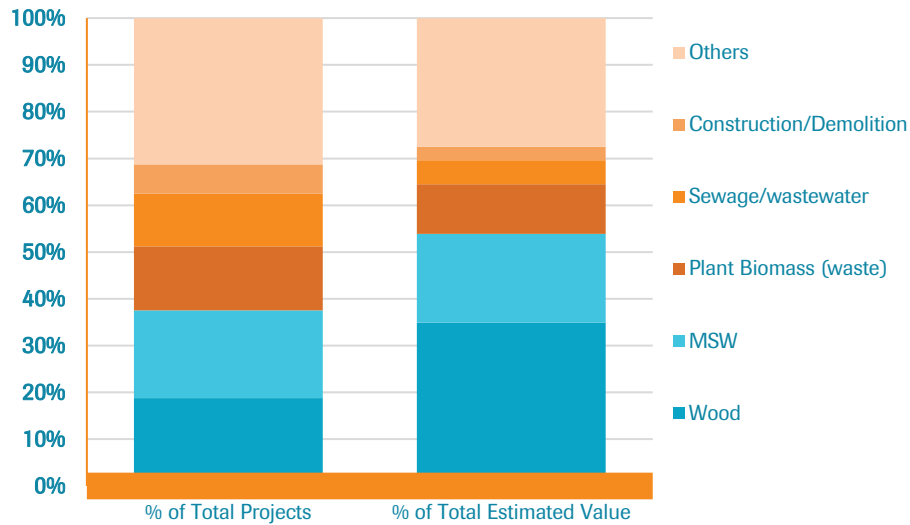
Latest Monthly Projects by Feedstock Type (December 2015)

	Projects	With Value (US\$m)	Reported Value (US\$m)	Total Estimated Value (US\$m)	Average value (US\$m)
Animal	4	1	7	57	14
Clinical	0	0	0	-	-
Construction/Demolition	5	1	5	141	28
e-Waste	0	0	0	-	-
Food	1	1	1	1	1
Gas	1	0	0	648	648
Glass	1	1	35	35	35
Hazardous	0	0	0	-	-
Heat	3	0	0	34	11
Industrial	4	0	0	83	21
Metals	2	1	4	45	22
MSW	15	4	111	942	63
Oil	1	0	0	30	30
Organic (general/unspecified)	5	1	1	173	35
Paper	0	0	0	-	-
Plant Biomass (non-waste)	3	0	0	258	86
Plant Biomass (waste)	11	4	136	523	48
Plastics	0	0	0	-	-
Radioactive	0	0	0	-	-
Rubber	0	0	0	-	-
Sewage/wastewater	9	3	54	256	28
Wood	15	10	1,370	1,728	115
Other	0	0	0	-	-
Total	80	27	1,725	4,954	62

Latest Monthly Projects by Feedstock Type (% of Total)

	% of Total Projects	% of Total Estimated Value
Animal	5.0	1.2
Clinical	-	-
Construction/Demolition	6.3	2.8
e-Waste	-	-
Food	1.3	-
Gas	1.3	13.1
Glass	1.3	0.7
Hazardous	-	-
Heat	3.8	0.7
Industrial	5.0	1.7
Metals	2.5	0.9
MSW	18.8	19.0
Oil	1.3	0.6
Organic (general/unspecified)	6.3	3.5
Paper	-	-
Plant Biomass (non-waste)	3.8	5.2
Plant Biomass (waste)	13.8	10.6
Plastics	-	-
Radioactive	-	-
Rubber	-	-
Sewage/wastewater	11.3	5.2
Wood	18.8	34.9
Other	-	-
Total	100.0	100.0

Projects By Feedstock Type, December 2015



Wood and other biomass-based feedstocks account for around one third of all new investment in waste technologies, reflecting a move away from traditional power generation in many countries.



Latest Monthly Capacity

For the 80 projects listed in December 2015, AcuComm estimates total waste capacity to be 21.5 million tonnes. This is equal to an average of 246,210 tonnes per project, and an average of 769 tonnes per day per project.

Landfill was the largest facility type in terms of capacity, amounting to 6.0 million tonnes, or 31.0% of the total. This was followed by WtE incineration with 4.0 million tonnes (20.6%).



Landfill represented 31% of estimated new capacity in December 2015. The largest is an expansion of a landfill site at Joliet, IL, USA, due to open in 2018.

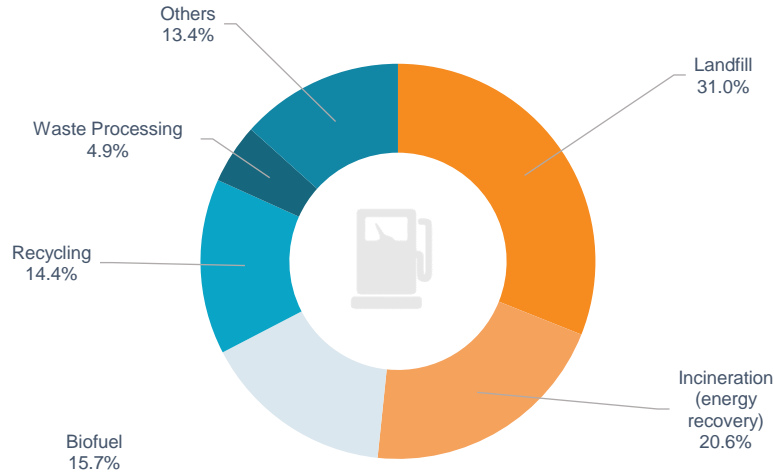
Estimated Waste Capacity of Projects Listed by Facility Type (December 2015)

	Projects	Estimated Annual Capacity (tonnes)	Average Annual Capacity (tonnes)	Average Tonnes Per Day
Anaerobic Digestion	7	380,980	54,426	170
Biofuel	8	3,060,514	382,564	1,196
Biogas	13	501,422	38,571	121
Gasification	2	164,889	82,444	258
Incineration (energy recovery)	19	4,007,396	210,916	659
Incineration (no energy recovery)	0	0	-	-
Integrated Facilities (IWMF)	1	277,154	277,154	866
Landfill	5	6,037,928	1,207,586	3,774
MBT	0	0	-	-
Recycling	17	2,793,356	164,315	513
Waste Processing	2	953,167	476,583	1,489
Others	6	1,273,790	254,758	796
Total	80	19,450,596	246,210	769

Estimated Capacity by Facility Type, % of Total (December 2015)

	% of Total Reported Capacity
Anaerobic Digestion	2.0
Biofuel	15.7
Biogas	2.6
Gasification	0.8
Incineration (energy recovery)	20.6
Incineration (no energy recovery)	-
Integrated Facilities (IWMF)	1.4
Landfill	31.0
MBT	-
Recycling	14.4
Waste Processing	4.9
Others	6.5
Total	100.0

% Capacity by Facility Type, December 2015



Approval for a major expansion to a landfill site at New Springfield, OH, USA, was announced in December 2015.

[Click map for full details](#)



MSW accounted for just over 4.7 million tonnes of capacity in December 2015, equal to 24.4% of the total, and an average of 988 tonnes per day. The other major feedstock categories were industrial waste and wood.



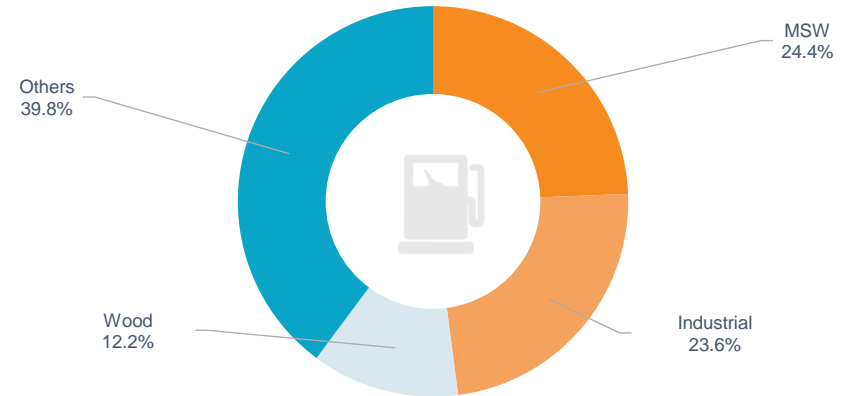
Latest Monthly Projects by Feedstock Type (December 2015)

	Projects	Annual Capacity (tonnes)	Average Annual Capacity (tonnes)	Average Tonnes Per Day
Animal	4	151,868	37,967	119
Clinical	0	0	-	-
Construction/Demolition	5	1,527,609	305,522	955
e-Waste	0	0	-	-
Food	1	31,751	31,751	99
Gas	1	0	-	-
Glass	1	124,824	124,824	390
Hazardous	0	0	-	-
Heat	3	1,037,974	345,991	1,081
Industrial	4	4,581,508	1,145,377	3,579
Metals	2	301,804	150,902	472
MSW	15	4,744,452	316,297	988
Oil	1	45,652	45,652	143
Organic (general/unspecified)	5	452,059	90,412	283
Paper	0	0	-	-
Plant Biomass (non-waste)	3	1,105,824	368,608	1,152
Plant Biomass (waste)	11	2,377,837	216,167	676
Plastics	0	0	-	-
Radioactive	0	0	-	-
Rubber	0	0	-	-
Sewage/wastewater	9	587,995	65,333	204
Wood	15	2,379,438	158,629	496
Other	0	0	-	-
Total	80	19,450,596	246,210	769

Reported Capacity by Feedstock, % of Total (December 2015)

	Capacity as % of Total
Animal	0.8
Clinical	-
Construction/Demolition	7.9
e-Waste	-
Food	0.2
Gas	-
Glass	0.6
Hazardous	-
Heat	5.3
Industrial	23.6
Metals	1.6
MSW	24.4
Oil	0.2
Organic (general/unspecified)	2.3
Paper	-
Plant Biomass (non-waste)	5.7
Plant Biomass (waste)	12.2
Plastics	-
Radioactive	-
Rubber	-
Sewage/wastewater	3.0
Wood	12.2
Other	-
Total	100.0

% Capacity by Feedstock, December 2015



Municipal Solid Waste accounted for 24.4% of waste capacity in projects covered in the Business Finder database in December 2015.



Latest Power Generation

In December 2015, estimated annual power generation amounted to 1,223 MW in total. 74.3% of this was from WtE incineration with most of the remainder coming from biofuel, worth 14.9% of the total.

Incineration amounted to 19 projects with total estimated generation of 909 MW, equal to 48 MW per plant. Biofuels amounted to eight projects, with total estimated output of 183 MW, or 26 MW per plant.



WtE incineration, whether standalone or as part of an integrated facility, continued to dominate the reported power generation of projects in December 2015.

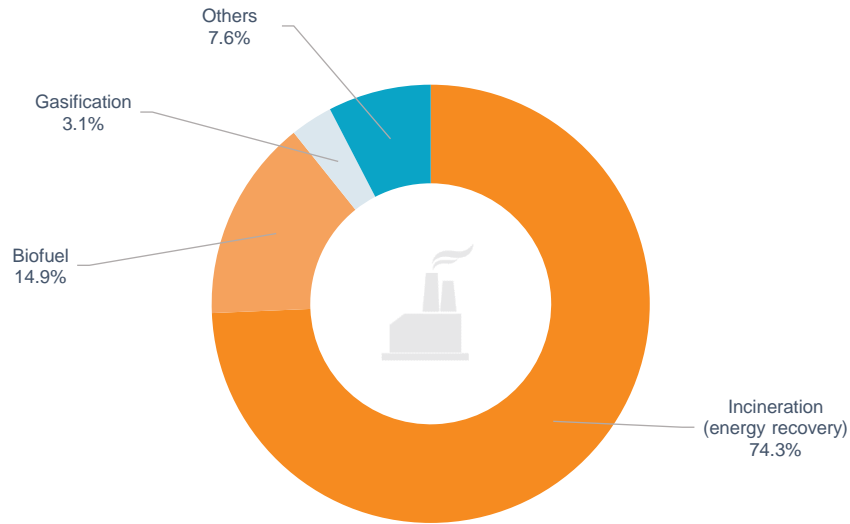
Estimated Power Generation of Projects Listed by Facility Type (December 2015)

	Projects	With Reported MW Generation	Estimated Annual MW Generation	Average MW Generation
Anaerobic Digestion	7	7	20	3
Biofuel	8	7	183	26
Biogas	13	13	41	3
Gasification	2	2	38	19
Incineration (energy recovery)	19	19	909	48
Incineration (no energy recovery)	0	0	0	-
Integrated Facilities (IWMF)	1	1	17	17
Landfill	5	0	0	-
MBT	0	0	0	-
Recycling	17	0	0	-
Waste Processing	2	0	0	-
Others	6	4	15	4
Total	80	53	1,223	23

Latest Estimated Power Generation by Facility Type, % of Total (December 2015)

	% of Total Projects
Anaerobic Digestion	1.6
Biofuel	14.9
Biogas	3.3
Gasification	3.1
Incineration (energy recovery)	74.3
Incineration (no energy recovery)	-
Integrated Facilities (IWMF)	1.4
Landfill	-
MBT	-
Recycling	-
Waste Processing	-
Others	1.2
Total	100.0

% MW Generation by Facility Type, Dec 2015



In December 2015, 74.3% of proposed power generation was through incineration, principally using wood, plant biomass and MSW as feedstocks.



Latest Estimated Power Generation of Projects Listed by Feedstock Type (December 2015)

	Projects	With Reported MW Generation	Estimated MW Generation	Average MW Generation
Animal	4	4	2	1
Clinical	0	0	0	-
Construction/Demolition	5	0	0	-
e-Waste	0	0	0	-
Food	1	1	3	3
Gas	1	1	2	2
Glass	1	0	0	-
Hazardous	0	0	0	-
Heat	3	3	13	4
Industrial	4	0	0	-
Metals	2	0	0	-
MSW	15	6	134	22
Oil	1	0	0	-
Organic (general/unspecified)	5	5	78	16
Paper	0	0	0	-
Plant Biomass (non-waste)	3	3	103	34
Plant Biomass (waste)	11	10	179	18
Plastics	0	0	0	-
Radioactive	0	0	0	-
Rubber	0	0	0	-
Sewage/wastewater	9	6	23	4
Wood	15	14	687	49
Other	0	0	0	-
Total	80	53	1,223	23

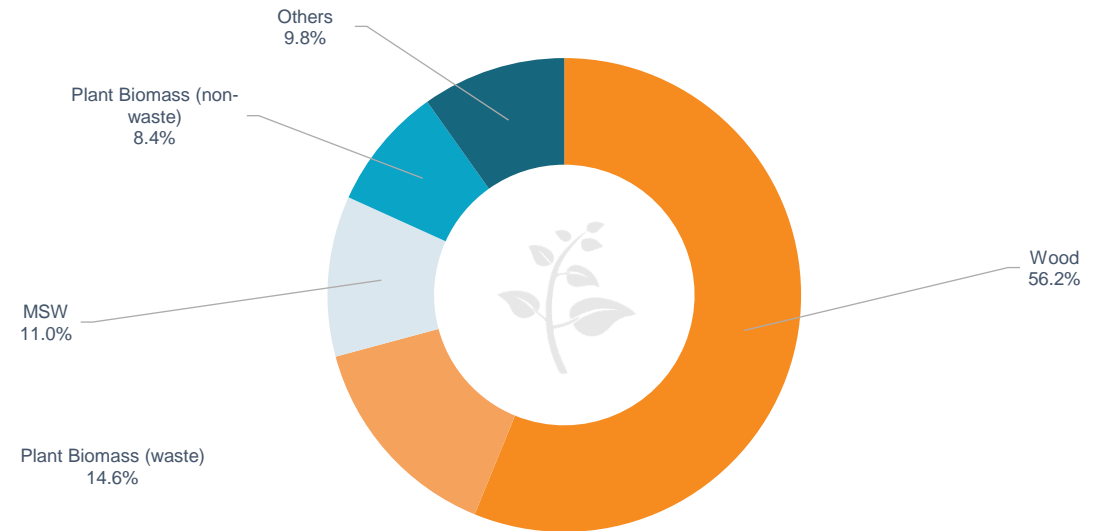
Latest Estimated Power Generation by Feedstock Type, % of Total (December 2015)

	MW Generation as % of Total
Animal	0.2
Clinical	-
Construction/Demolition	-
e-Waste	-
Food	0.2
Gas	0.2
Glass	-
Hazardous	-
Heat	1.0
Industrial	-
Metals	-
MSW	11.0
Oil	-
Organic (general/unspecified)	6.3
Paper	-
Plant Biomass (non-waste)	8.4
Plant Biomass (waste)	14.6
Plastics	-
Radioactive	-
Rubber	-
Sewage/wastewater	1.9
Wood	56.2
Other	-
Total	100.0

Wood-based materials - whether waste products or grown specially - are increasingly being used as a fuel for providing domestic power for heat and light.



% MW Generation by Feedstock Type, December 2015



Latest Country Focus

The USA was the leading country in December 2015 in terms of new projects reported, with 14 in total. This was followed by the UK with 11 and China with six.

In terms of estimated value, Brazil was the leader, with US\$1,211 million or 24.4% of the total. This was followed by the USA with US\$1,061 million or 21.4%, and the UK with US\$774 million or 15.6%.



Significant waste investments occur not only in developed markets, but across the developing world.

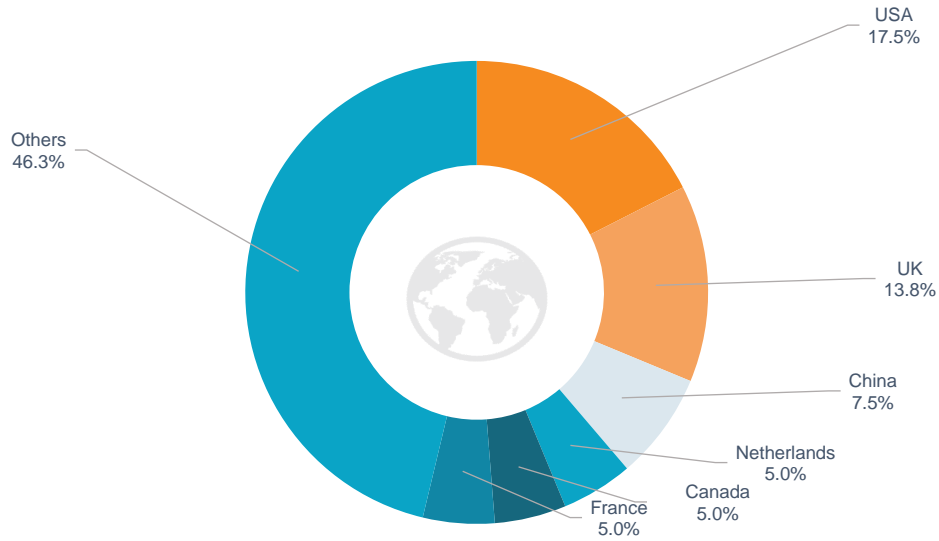
Top Ten Countries (number of projects listed), December 2015

	Projects	% of Total
USA	14	17.5
UK	11	13.8
China	6	7.5
Netherlands	4	5.0
Canada	4	5.0
France	4	5.0
Norway	3	3.8
Brazil	3	3.8
South Korea	3	3.8
Spain	2	2.5
Subtotal	54	67.5
Others	26	32.5
Total	80	100.0

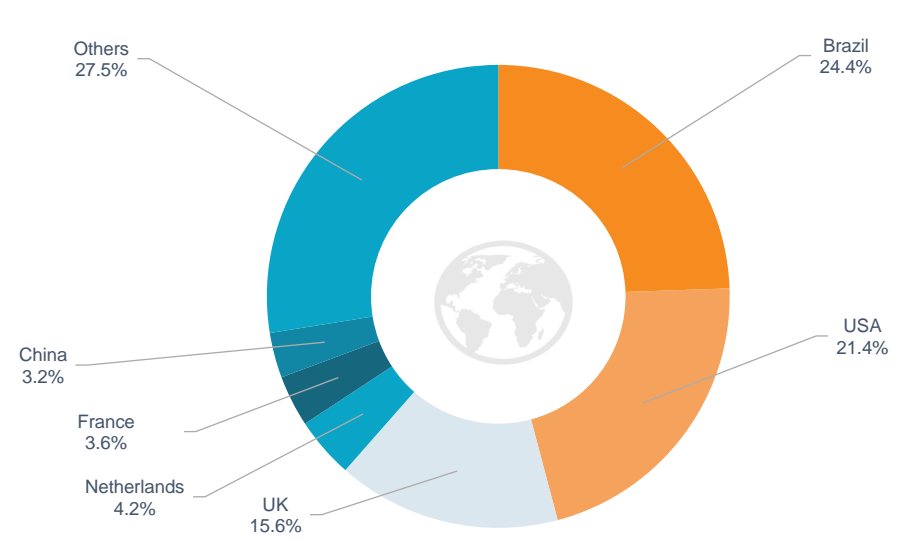
Top Ten Countries (estimated value of projects listed), December 2015

	US\$ millions	% of Total
Brazil	1,211	24.4
USA	1,061	21.4
UK	774	15.6
Netherlands	210	4.2
France	177	3.6
China	156	3.2
Philippines	152	3.1
South Korea	150	3.0
Canada	146	2.9
Malaysia	140	2.8
Subtotal	4,177	84.3
Others	777	15.7
Total	4,954	100.0

Leading Countries, Number of Projects, December 2015



Leading Countries, Value of Projects, December 2015



Operational Date Focus

Of the 80 projects reported on in December 2015, 14 are already in operation, valued at US\$513 million. A further 20 are estimated to become operational in 2016, worth a total of US\$1,015 million. For 2017, 19 projects are expected to become operational, worth US\$667 million.



Once work starts, the average project takes around 18 months to become operational. Most, however have on-going operational requirements for much longer.

Projects by Estimated Operational Date (December 2015)

	Number of Projects	Value (US\$ millions)
Already operational	14	513
Q4-2015	0	-
Q1-2016	3	58
Q2-2016	3	33
Q3-2016	8	102
Q4-2016	6	821
Q1-2017	1	32
Q2-2017	1	20
Q3-2017	6	227
Q4-2017	11	388
Q1-2018	3	105
Q1-2019	1	35
Q2-2019	2	98
Q3-2019	0	0
Q4-2019	0	0
2020+	4	1,286

Estimated Value of Investments by Operational Date, 2016-2020 (US\$ millions)

