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

NOVEMBER 2015

Issue Number

015

Date of Publication

December 2015

In this month's report…

The latest waste plant developments in November 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

Explanatory Notes

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

Andy Crofts
Editor & Chief Analyst
andy.crofts@acucomm.net

Issue Number 015 Date of Publication December 2015

Contents

ISWA
International Solid Waste Association

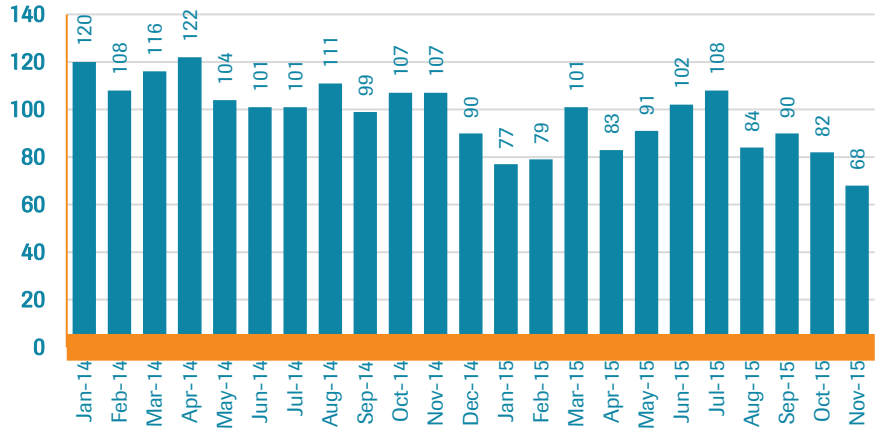
Projects This Month: November 2015

Overview

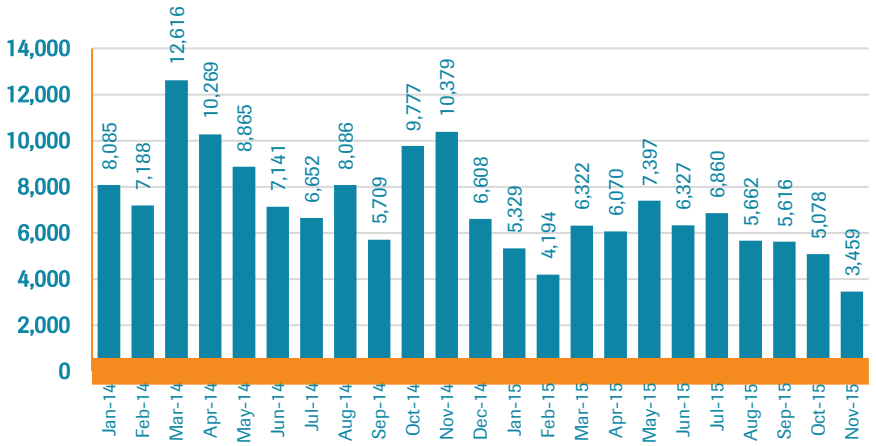
AcuComm reported on 68 new waste projects in November 2015. This takes the annual number (since December 2014) to 1,055, and the total overall since January 2014 to 2,251. The database as a whole contains 3,645 active project investments.

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$3,459 million. This takes the total estimated value of projects reported since December 2014 to US$79,300 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 November 2015, accounting for 16 or 23.5% of the total. This was followed by biogas projects (nine projects, or 13.2%) and recycling (eight projects, or 11.8% each).

Biofuel is the leading facility type by estimated value, at US$1,082 million, or 31.3% of the total. This was closely followed by incineration with energy recovery with US$1,037 million, or 30.0% of the total.

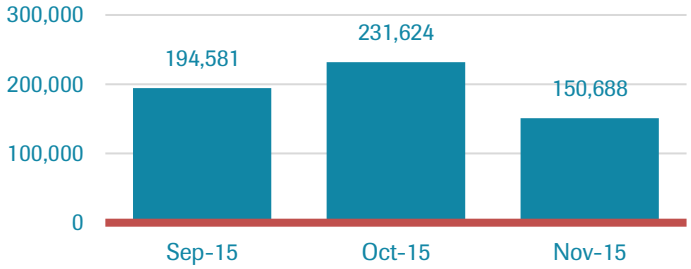
Quarterly Project Data Comparison

Key Indicators for September 2015 to November 2015

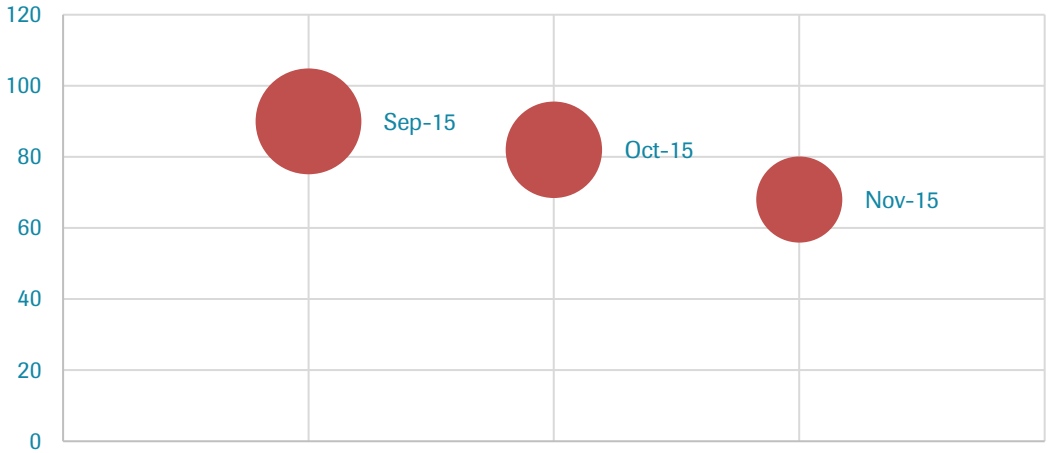
This page compares data on projects reported in the current month, compared with the previous two months. This provides a comparison of the most recent data, and also a quarterly total. The size of the circles in the bottom left graph represents the total estimated project values, as reported in the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

	Sep-15	Oct-15	Nov-15	Quarterly Total
Number of new projects	90	82	68	240
Total estimated value (US$ millions)	5,616	5,078	3,459	14,153
Average value (US$ millions)	62	62	51	59
Estimated waste capacity (tonnes)	17,512,262	18,993,156	10,246,806	46,752,224
Average annual capacity per project (tonnes)	194,581	231,624	150,688	194,801
Estimated power generation (MW)	1,593	1,206	797	3,596
Average MW per project	18	15	12	15

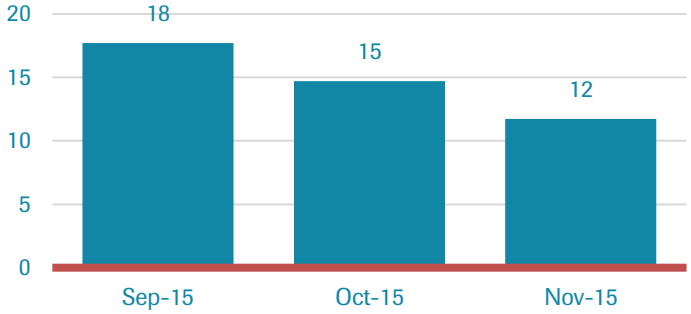
Average annual capacity per project (tonnes)



Projects by Number and Estimated US$ Value



Average MW per project



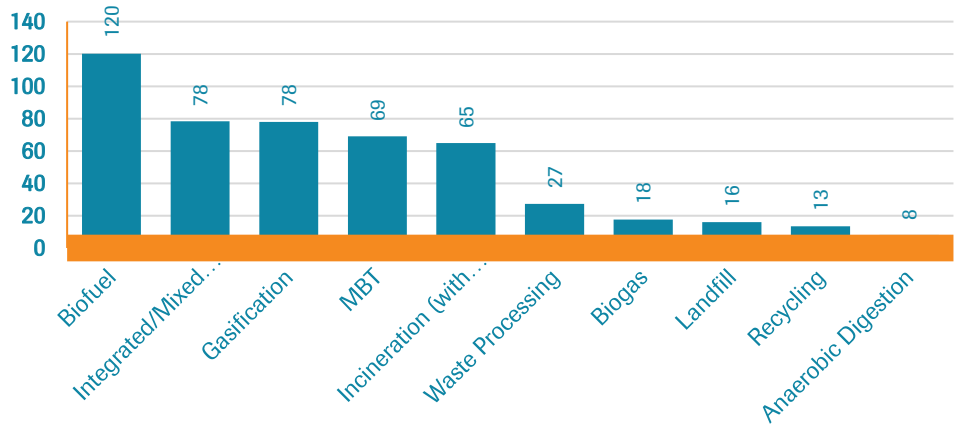
Latest Monthly Projects by Facility Type (November 2015)

	Projects	With Value (US$m)	Reported Value	Total Estimated Value	Average value
Anaerobic Digestion	4	3	11	32	8
Biofuel	9	3	165	1,082	120
Biogas	9	4	41	159	18
Gasification	3	1	40	234	78
Incineration (energy recovery)	16	10	298	1,037	65
Incineration (no energy recovery)	0	0	0	0	-
Integrated Facilities (IWMF)	3	2	50	235	78
Landfill	6	0	0	96	16
MBT	1	0	0	69	69
Recycling	8	3	11	107	13
Waste Processing	5	3	46	137	27
Others	4	1	58	272	68
Total	**68**	**30**	**720**	**3,459**	**51**

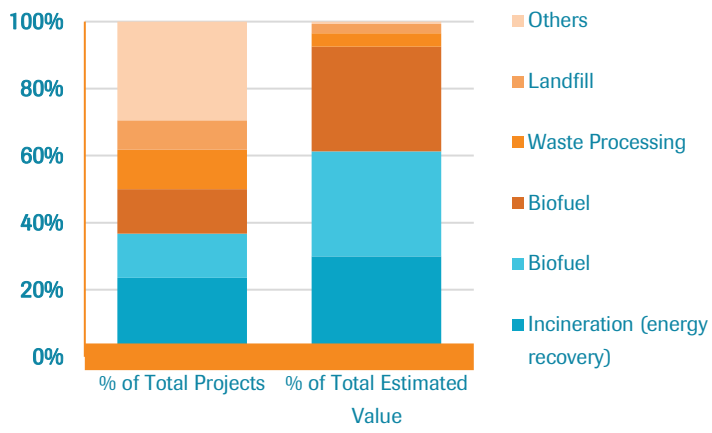
Latest Monthly Projects by Facility Type % of Total (November 2015)

	% of Total Projects	% of Total Estimated Value
Anaerobic Digestion	5.9	0.9
Biofuel	13.2	31.3
Biogas	13.2	4.6
Gasification	4.4	6.8
Incineration (energy recovery)	23.5	30.0
Incineration (no energy recovery)	0.0	0.0
Integrated Facilities (IWMF)	4.4	6.8
Landfill	8.8	2.8
MBT	1.5	2.0
Recycling	11.8	3.1
Waste Processing	7.4	4.0
Others	5.9	7.9
Total	**100.0**	**100.0**

Average Value of Projects, Nov 2015 (US$m)



Projects By Facility Type, Nov 2015



In terms of waste feedstock type, MSW was the leading category in November 2015. MSW accounted for 23 projects (33.8% of the total) with an estimated value of US$1,254 million (36.3% of the total).

Wood was the other principal feedstock in November 2015. This accounted for 11 projects, equal to US$435 million or 12.6% of the estimated value.

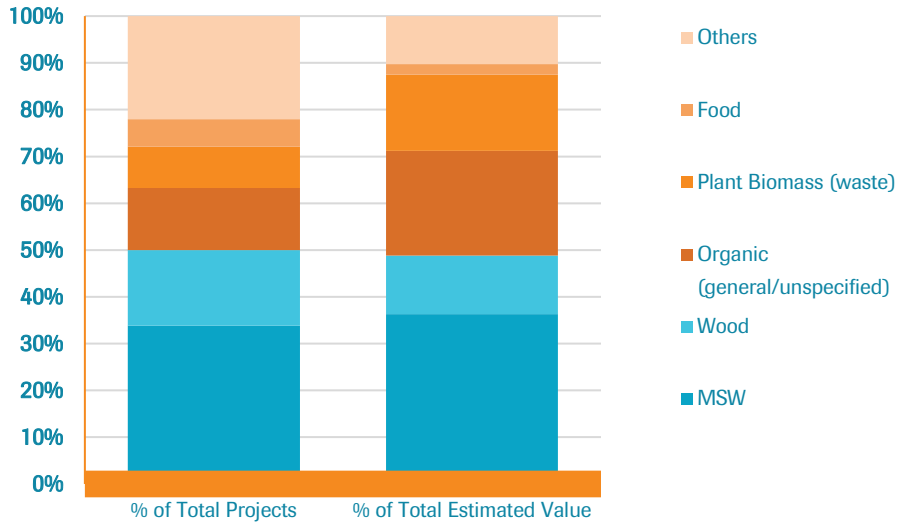
Latest Monthly Projects by Feedstock Type (November 2015)

	Projects	With Value (US$m)	Reported Value (US$m)	Total Estimated Value	Average value (US$m)
Animal	2	1	31	53	26
Clinical	0	0	0	-	-
Construction/Demolition	0	0	0	-	-
e-Waste	1	0	0	22	22
Food	4	2	49	78	20
Gas	4	0	0	63	16
Glass	2	1	1	13	6
Hazardous	0	0	0	-	-
Heat	1	0	0	36	36
Industrial	1	1	92	92	92
Metals	0	0	0	-	-
MSW	23	10	201	1,254	55
Oil	1	1	0	0	0
Organic (general/unspecified)	9	3	7	774	86
Paper	0	0	0	-	-
Plant Biomass (non-waste)	0	0	0	-	-
Plant Biomass (waste)	6	2	173	563	94
Plastics	1	0	0	17	17
Radioactive	0	0	0	-	-
Rubber	0	0	0	-	-
Sewage/wastewater	2	1	24	60	30
Wood	11	8	141	435	40
Other	0	0	0	-	-
Total	**68**	**30**	**720**	**3,459**	**51**

Latest Monthly Projects by Feedstock Type (% of Total)

	% of Total Projects	% of Total Estimated Value
Animal	2.9	1.5
Clinical	-	-
Construction/Demolition	-	-
e-Waste	1.5	0.6
Food	5.9	2.3
Gas	5.9	1.8
Glass	2.9	0.4
Hazardous	-	-
Heat	1.5	1.0
Industrial	1.5	2.7
Metals	-	-
MSW	33.8	36.3
Oil	1.5	-
Organic (general/unspecified)	13.2	22.4
Paper	-	-
Plant Biomass (non-waste)	-	-
Plant Biomass (waste)	8.8	16.3
Plastics	1.5	0.5
Radioactive	-	-
Rubber	-	-
Sewage/wastewater	2.9	1.7
Wood	16.2	12.6
Other	-	-
Total	**100.0**	**100.0**

Projects By Feedstock Type, November 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 68 projects listed in November 2015, AcuComm estimates total waste capacity to be 10.2 million tonnes. This is equal to an average of 160,106 tonnes per project, and an average of 500 tonnes per day per project.

WtE incineration was the largest facility type in terms of capacity, amounting to 3.1 million tonnes, or 30.4% of the total. This was followed by biofuels with 2.8 million tonnes (27.3%).

WtE incineration represented 30% of estimated new capacity in November 2015. The largest investments are two new plants announced by China Everbright in Shandong and Henan, China.

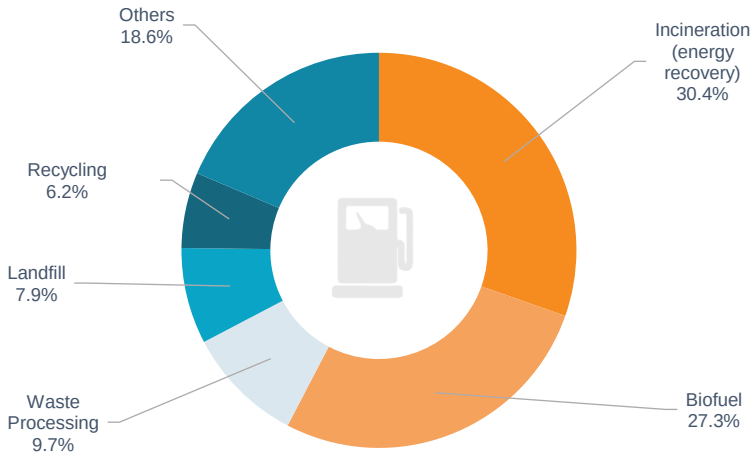
Estimated Waste Capacity of Projects Listed by Facility Type (November 2015)

	Projects	Estimated Annual Capacity (tonnes)	Average Annual Capacity (tonnes)	Average Tonnes Per Day
Anaerobic Digestion	4	137,147	34,287	107
Biofuel	9	2,794,400	310,489	970
Biogas	9	402,796	44,755	140
Gasification	3	227,368	75,789	237
Incineration (energy recovery)	16	3,113,062	194,566	608
Incineration (no energy recovery)	0	0	-	-
Integrated Facilities (IWMF)	3	402,595	134,198	419
Landfill	6	805,309	402,655	1,258
MBT	1	109,500	109,500	342
Recycling	8	634,626	79,328	248
Waste Processing	5	991,186	198,237	619
Others	4	628,816	157,204	491
Total	**68**	**10,246,806**	**160,106**	**500**

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

	% of Total Reported Capacity
Anaerobic Digestion	1.3
Biofuel	27.3
Biogas	3.9
Gasification	2.2
Incineration (energy recovery)	30.4
Incineration (no energy recovery)	-
Integrated Facilities (IWMF)	3.9
Landfill	7.9
MBT	1.1
Recycling	6.2
Waste Processing	9.7
Others	6.1
Total	**100.0**

% Capacity by Facility Type, November 2015



MSW accounted for just over 4.9 million tonnes of capacity in November 2015, equal to 48.0% of the total, and an average of 668 tonnes per day. The other major feedstock categories were plant biomass and wood.

Latest Monthly Projects by Feedstock Type (November 2015)

	Projects	Annual Capacity (tonnes)	Average Annual Capacity (tonnes)	Average Tonnes Per Day
Animal	2	143,778	71,889	225
Clinical	0	0	-	-
Construction/Demolition	0	0	-	-
e-Waste	1	48,184	48,184	151
Food	4	88,026	22,006	69
Gas	4	0	-	-
Glass	2	8,734	4,367	14
Hazardous	0	0	-	-
Heat	1	55,529	55,529	174
Industrial	1	129,363	129,363	404
Metals	0	0	-	-
MSW	23	4,914,872	213,690	668
Oil	1	49,680	49,680	155
Organic (general/unspecified)	9	631,993	70,221	219
Paper	0	0	-	-
Plant Biomass (non-waste)	0	0	-	-
Plant Biomass (waste)	6	2,938,230	489,705	1,530
Plastics	1	183	183	1
Radioactive	0	0	-	-
Rubber	0	0	-	-
Sewage/wastewater	2	23,193	11,597	36
Wood	11	1,215,044	110,459	345
Other	0	0	-	-
Total	**68**	**10,246,806**	**160,106**	**500**

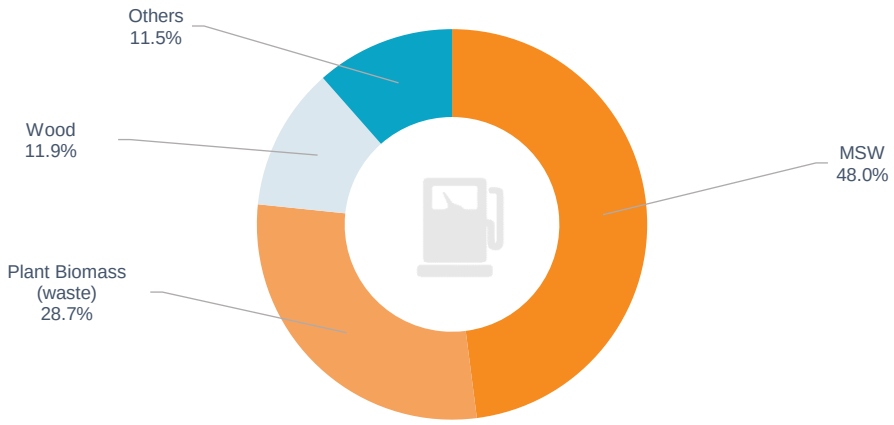
A major new municipal landfill site opened near Edmonton, Alberta, in Canada in October 2015. The operator is Waste Management of Canada.

Click map for full details

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

	Capacity as % of Total
Animal	1.4
Clinical	-
Construction/Demolition	-
e-Waste	0.5
Food	0.9
Gas	-
Glass	0.1
Hazardous	-
Heat	0.5
Industrial	1.3
Metals	-
MSW	48.0
Oil	0.5
Organic (general/unspecified)	6.2
Paper	-
Plant Biomass (non-waste)	-
Plant Biomass (waste)	28.7
Plastics	0.0
Radioactive	-
Rubber	-
Sewage/wastewater	0.2
Wood	11.9
Other	-
Total	**100.0**

% Capacity by Feedstock, November 2015



Municipal Solid Waste accounted for 48.0% of waste capacity in projects covered in the Business Finder database in November 2015.

Latest Power Generation

In November 2015, estimated annual power generation amounted to 797 MW in total. 42.6% of this was from WtE incineration with most of the remainder coming from biofuel, worth 28.8% of the total.

Incineration amounted to 16 projects with total estimated generation of 340 MW, equal to 21 MW per plant. Biofuels amounted to nine projects, with total estimated output of 229 MW, or 25 MW per plant.

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

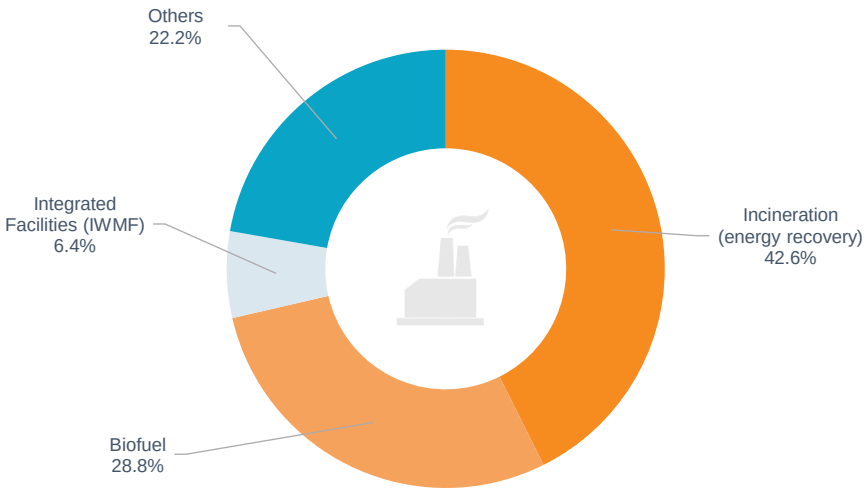
Estimated Power Generation of Projects Listed by Facility Type (November 2015)

	Projects	With Reported MW Generation	Estimated Annual MW Generation	Average MW Generation
Anaerobic Digestion	4	4	9	2
Biofuel	9	9	229	25
Biogas	9	9	15	2
Gasification	3	3	34	11
Incineration (energy recovery)	16	16	340	21
Incineration (no energy recovery)	0	0	0	-
Integrated Facilities (IWMF)	3	3	51	17
Landfill	6	6	21	3
MBT	1	1	4	4
Recycling	8	0	0	-
Waste Processing	5	5	31	6
Others	4	4	64	16
Total	**68**	**60**	**797**	**13**

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

	% of Total Projects
Anaerobic Digestion	1.1
Biofuel	28.8
Biogas	1.9
Gasification	4.2
Incineration (energy recovery)	42.6
Incineration (no energy recovery)	-
Integrated Facilities (IWMF)	6.4
Landfill	2.6
MBT	0.5
Recycling	-
Waste Processing	3.9
Others	8.0
Total	**100.0**

% MW Generation by Facility Type, Nov 2015



In November 2015, 42.6% of proposed power generation was through incineration, principally using MSW and wood biomass as feedstocks.

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

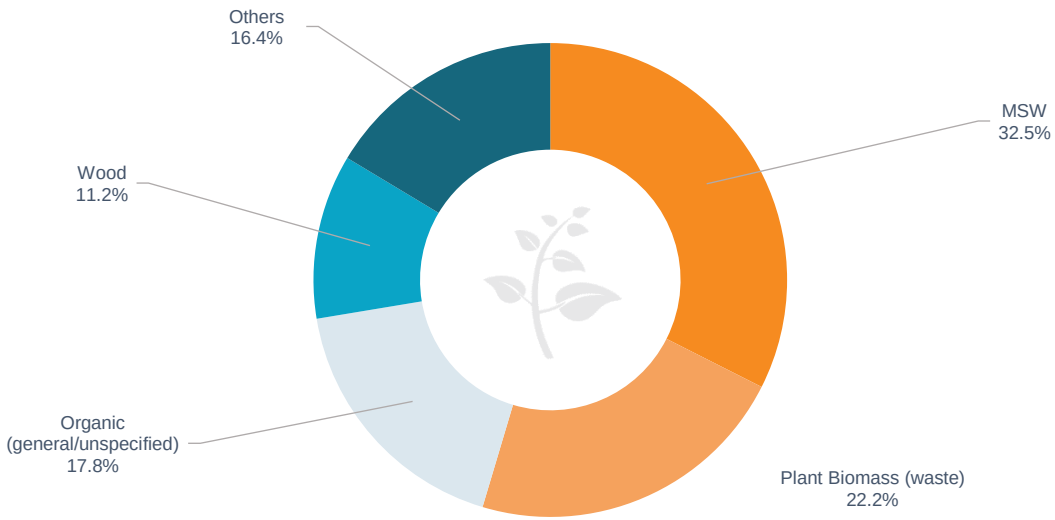
	Projects	With Reported MW Generation	Estimated MW Generation	Average MW Generation
Animal	2	2	3	2
Clinical	0	0	0	-
Construction/Demolition	0	0	0	-
e-Waste	1	0	0	-
Food	4	4	29	7
Gas	4	4	8	2
Glass	2	0	0	-
Hazardous	0	0	0	-
Heat	1	1	0	0
Industrial	1	1	30	30
Metals	0	0	0	-
MSW	23	18	259	14
Oil	1	1	16	16
Organic (general/unspecified)	9	9	142	16
Paper	0	0	0	-
Plant Biomass (non-waste)	0	0	0	-
Plant Biomass (waste)	6	6	177	29
Plastics	1	1	37	37
Radioactive	0	0	0	-
Rubber	0	0	0	-
Sewage/wastewater	2	2	7	4
Wood	11	11	89	8
Other	0	0	0	-
Total	**68**	**60**	**797**	**13**

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

	MW Generation as % of Total
Animal	0.4
Clinical	-
Construction/Demolition	-
e-Waste	-
Food	3.6
Gas	1.0
Glass	-
Hazardous	-
Heat	0.0
Industrial	3.8
Metals	-
MSW	32.5
Oil	2.0
Organic (general/unspecified)	17.8
Paper	-
Plant Biomass (non-waste)	-
Plant Biomass (waste)	22.2
Plastics	4.7
Radioactive	-
Rubber	-
Sewage/wastewater	0.9
Wood	11.2
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, November 2015



Latest Country Focus

The USA was the leading country in November 2015 in terms of new projects reported, with 10 in total. This was followed by South Africa with five and Serbia, India, the UK and Japan with four each.

In terms of estimated value, India was the leader, with US$484 million or 14.0% of the total. This was followed by the USA with US$313 million or 9.0%, and Nigeria with US$278 million or 8.0%.

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

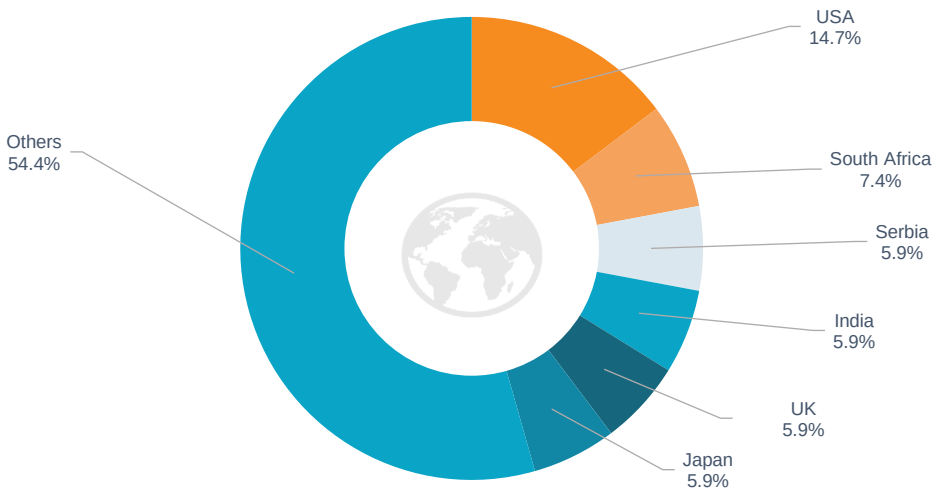
Top Ten Countries (number of projects listed), November 2015

	Projects	% of Total
USA	10	14.7
South Africa	5	7.4
Serbia	4	5.9
India	4	5.9
UK	4	5.9
Japan	4	5.9
Australia	3	4.4
Spain	2	2.9
Russia	2	2.9
Brazil	2	2.9
Subtotal	**40**	**58.8**
Others	28	41.2
Total	**68**	**100.0**

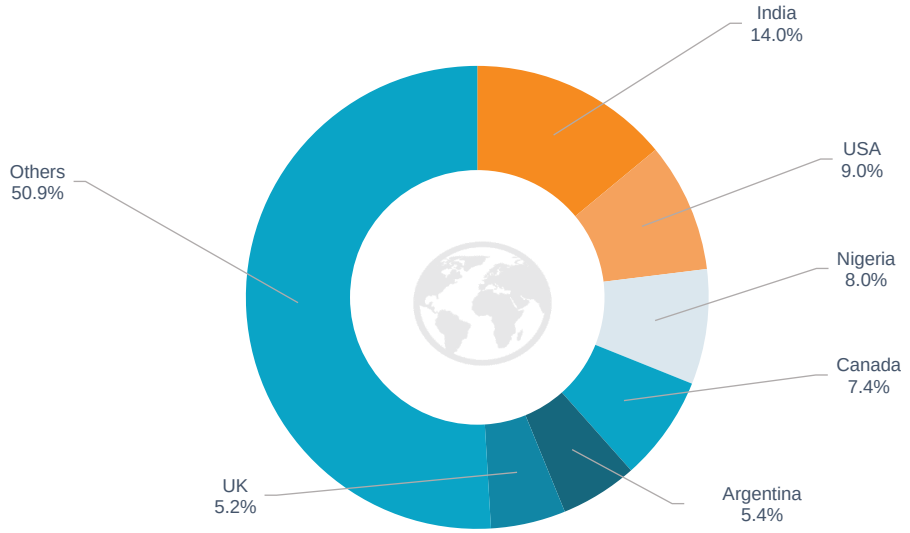
Top Ten Countries (estimated value of projects listed), November 2015

	US$ millions	% of Total
India	484	14.0
USA	313	9.0
Nigeria	278	8.0
Canada	254	7.4
Argentina	186	5.4
UK	181	5.2
Sweden	175	5.1
Bangladesh	154	4.4
Germany	154	4.4
Zambia	137	4.0
Subtotal	**2,316**	**66.9**
Others	1,143	33.1
Total	**3,459**	**100.0**

Leading Countries, Number of Projects, November 2015



Leading Countries, Value of Projects, November 2015



Operational Date Focus

Of the 68 projects reported on in November 2015, nine are already in operation, valued at US$325 million. A further 19 are estimated to become operational in 2016, worth a total of US$1,074 million. For 2017, 20 projects are expected to become operational, worth US$953 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 (November 2015)

	Number of Projects	Value (US$ millions)
Already operational	9	325
Q4-2015	0	-
Q1-2016	5	223
Q2-2016	2	25
Q3-2016	4	207
Q4-2016	8	619
Q1-2017	2	145
Q2-2017	2	194
Q3-2017	8	102
Q4-2017	8	512
Q1-2018	6	123
Q1-2019	3	268
Q2-2019	4	131
Q3-2019	0	0
Q4-2019	0	0
2020+		

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