

Waste Business Monitor

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



ALL DATA CURRENT AT

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In this month's report...

The latest waste plant developments in May 2016

- 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



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



Contents

Projects this month (May 2016)

Latest Monthly Capacity

Latest Power Generation

Latest Country Focus

Completion Date Focus

1

6

9

12

14



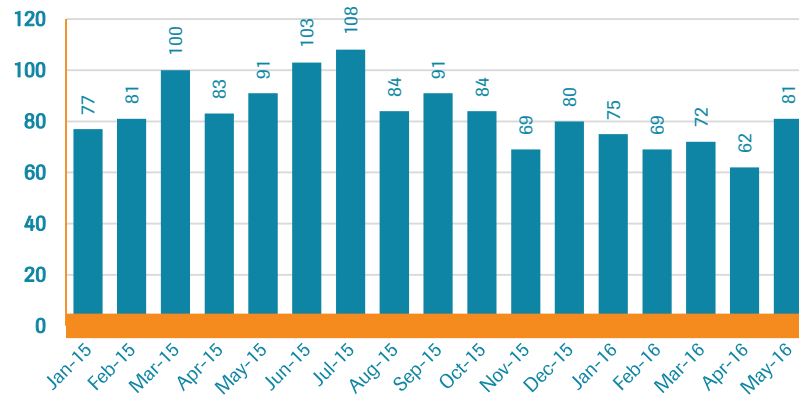
Projects This Month: May 2016

Overview

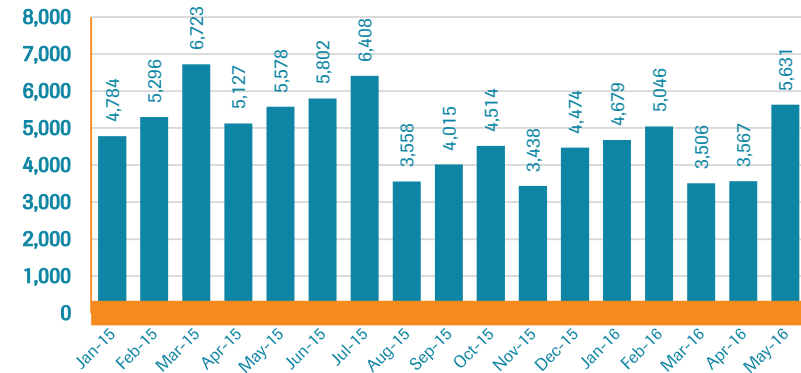
AcuComm reported on 81 new/updated waste projects in May 2016. This takes the annual number (since June 2015) to 978, and the total overall since January 2015 to 1,410. The database as a whole contains 4,106 active project investments.

Each new waste project represents on-going investment of an average of around US\$63 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\$5,631 million. This takes the total estimated value of projects reported since June 2015 to US\$54,639 million. The average estimated value of a waste project over this period is US\$69 million.



Incineration (with energy recovery) projects form the largest number in May 2016, accounting for 22 or 27.2% of the total. This was followed by recycling with 18 projects, or 22.2% of the total.



WtE incineration is the leading facility type by estimated value, at US\$2,485 million, or 44.1% of the total. This was followed by biofuel with US\$1,057 million, or 18.8% of the total.

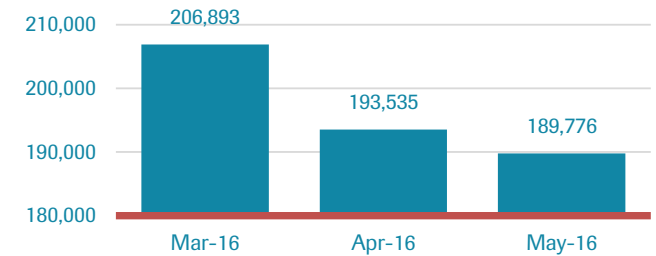
Quarterly Project Data Comparison

Key Indicators for March 2016 to May 2016

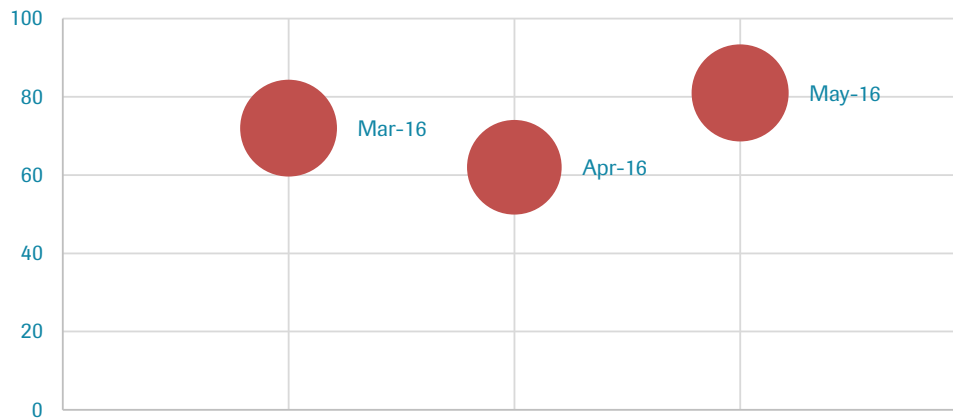
	Mar-16	Apr-16	May-16	Quarterly Total
Number of new projects	72	62	81	215
Total estimated value (US\$ millions)	3,506	3,567	5,631	12,704
Average value (US\$ millions)	49	58	70	59
Estimated waste capacity (tonnes)	14,896,301	11,999,166	15,371,894	42,267,361
Average annual capacity per project (tonnes)	206,893	193,535	189,776	196,592
Estimated power generation (MW)	1,001	823	1,132	2,956
Average MW per project	14	13	14	14

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.

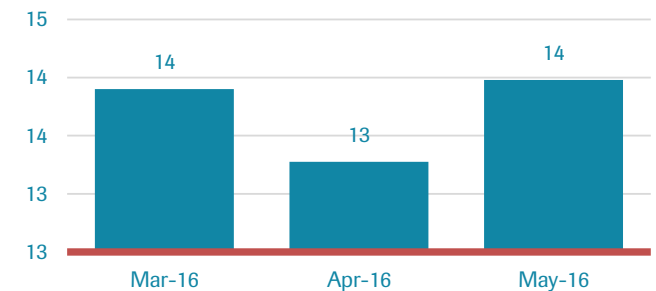
Average annual capacity per project (tonnes)



Projects by Number and Estimated US\$ Value



Average MW per project



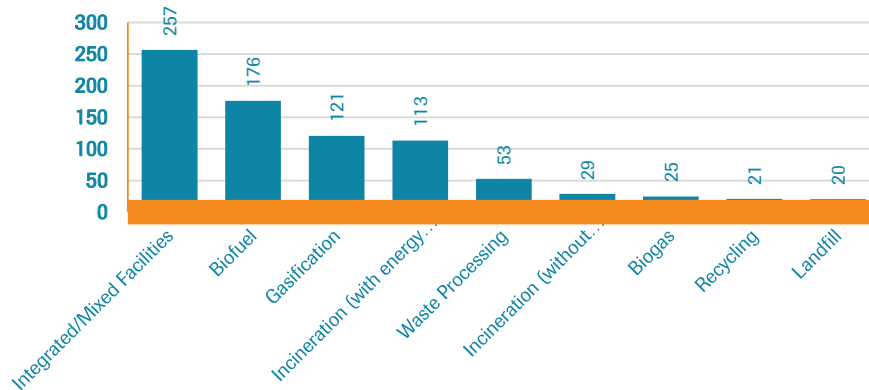
Latest Monthly Projects by Facility Type (May 2016)

	Projects	With Value (US\$m)	Reported Value (US\$m)	Total Estimated Value (US\$m)	Average value (US\$m)
Anaerobic Digestion	6	3	29	100	17
Biofuel	6	4	813	1,057	176
Biogas	4	1	50	99	25
Gasification	2	0	0	241	121
Incineration (energy recovery)	22	14	1,648	2,485	113
Incineration (no energy recovery)	4	2	46	115	29
Integrated Facilities (IWMF)	2	1	325	513	257
Landfill	7	2	55	142	20
MBT	0	0	0	0	-
Recycling	18	7	49	381	21
Waste Processing	8	2	6	422	53
Others	2	1	6	76	38
Total	81	37	3,027	5,631	70

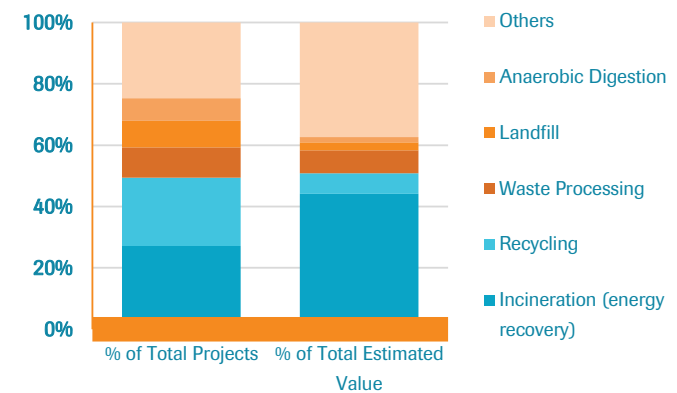
Latest Monthly Projects by Facility Type % of Total (May 2016)

	% of Total Projects	% of Total Estimated Value
Anaerobic Digestion	7.4	1.8
Biofuel	7.4	18.8
Biogas	4.9	1.8
Gasification	2.5	4.3
Incineration (energy recovery)	27.2	44.1
Incineration (no energy recovery)	4.9	2.0
Integrated Facilities (IWMF)	2.5	9.1
Landfill	8.6	2.5
MBT	0.0	0.0
Recycling	22.2	6.8
Waste Processing	9.9	7.5
Others	2.5	1.3
Total	100.0	100.0

Average Value of Projects, May 2016 (US\$m)



Projects By Facility Type, May 2016



In terms of waste feedstock type, MSW was the leading category in May 2016. MSW accounted for 24 projects (29.6% of the total) with an estimated value of US\$1,576 million (28.0% of the total), equal to US\$66 million on average.



Wood and other plant biomass were the other principal feedstocks in May 2016. These accounted for 21 projects in total, worth an estimated US\$2,523 million.



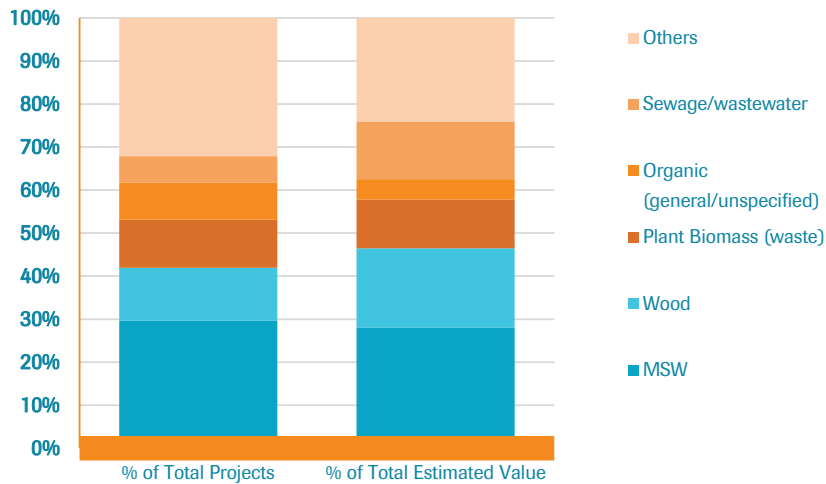
Latest Monthly Projects by Feedstock Type (May 2016)

	Projects	With Value (US\$m)	Reported Value (US\$m)	Total Estimated Value (US\$m)	Average value (US\$m)
Animal	1	0	-	13	13
Clinical	1	0	-	2	2
Construction/Demolition	2	0	-	31	15
e-Waste	0	0	-	-	-
Food	2	1	9	30	15
Gas	1	0	-	15	15
Glass	4	4	27	27	7
Hazardous	3	3	53	53	18
Heat	0	0	-	-	-
Industrial	1	1	46	46	46
Metals	3	1	15	117	39
MSW	24	12	729	1,576	66
Oil	1	1	7	7	7
Organic (general/unspecified)	7	2	24	264	38
Paper	1	0	-	91	91
Plant Biomass (non-waste)	2	1	698	843	421
Plant Biomass (waste)	9	4	164	641	71
Plastics	2	0	-	34	17
Radioactive	0	0	-	-	-
Rubber	1	0	-	28	28
Sewage/wastewater	5	3	665	757	151
Wood	10	4	589	1,039	104
Other	1	0	-	16	16
Total	81	37	3,027	5,631	70

Latest Monthly Projects by Feedstock Type (% of Total)

	% of Total Projects	% of Total Estimated Value
Animal	1.2	0.2
Clinical	1.2	-
Construction/Demolition	2.5	0.5
e-Waste	-	-
Food	2.5	0.5
Gas	1.2	0.3
Glass	4.9	0.5
Hazardous	3.7	0.9
Heat	-	-
Industrial	1.2	0.8
Metals	3.7	2.1
MSW	29.6	28.0
Oil	1.2	0.1
Organic (general/unspecified)	8.6	4.7
Paper	1.2	1.6
Plant Biomass (non-waste)	2.5	15.0
Plant Biomass (waste)	11.1	11.4
Plastics	2.5	0.6
Radioactive	-	-
Rubber	1.2	0.5
Sewage/wastewater	6.2	13.4
Wood	12.3	18.5
Other	1.2	0.3
Total	100.0	100.0

Projects By Feedstock Type, May 2016



General municipal waste accounts for a significant part of waste throughput, although it is by no means the only feedstock.



Latest Monthly Capacity

For the 81 projects listed in May 2016, AcuComm estimates total waste capacity to be 15.4 million tonnes. This is equal to an average of 192,149 tonnes per project, and an average of 600 tonnes per day per project.

WtE incineration was the largest facility type in terms of capacity, amounting to 5.6 million tonnes, or 36.6% of the total. This was followed by recycling with 2.3 million tonnes (15.1%).



Incineration with energy recovery represented 36.6% of estimated new capacity in May 2016.

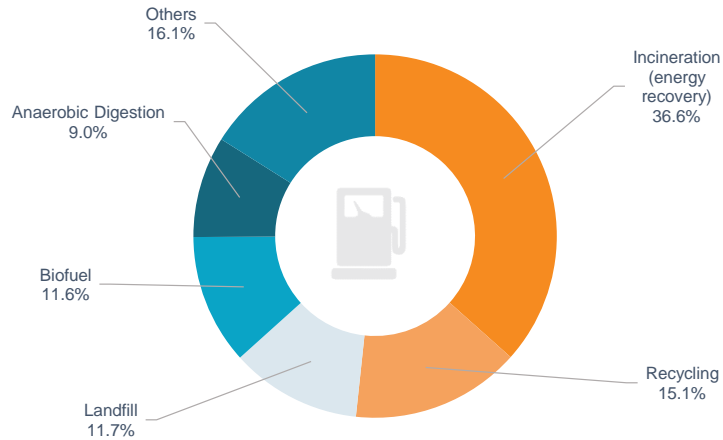
Estimated Waste Capacity of Projects Listed by Facility Type (May 2016)

	Projects	Estimated Annual Capacity (tonnes)	Average Annual Capacity (tonnes)	Average Tonnes Per Day
Anaerobic Digestion	6	1,386,997	231,166	722
Biofuel	6	1,779,134	296,522	927
Biogas	4	319,183	79,796	249
Gasification	2	219,768	109,884	343
Incineration (energy recovery)	22	5,626,331	255,742	799
Incineration (no energy recovery)	4	285,128	71,282	223
Integrated Facilities (IWMF)	2	521,905	260,953	815
Landfill	7	1,791,011	298,502	933
MBT	0	0	-	-
Recycling	18	2,319,128	128,840	403
Waste Processing	8	958,068	119,759	374
Others	2	165,240	82,620	258
Total	81	15,371,894	192,149	600

Estimated Capacity by Facility Type, % of Total (May 2016)

	% of Total Reported Capacity
Anaerobic Digestion	9.0
Biofuel	11.6
Biogas	2.1
Gasification	1.4
Incineration (energy recovery)	36.6
Incineration (no energy recovery)	1.9
Integrated Facilities (IWMF)	3.4
Landfill	11.7
MBT	-
Recycling	15.1
Waste Processing	6.2
Others	1.1
Total	100.0

% Capacity by Facility Type, May 2016



In May, the tender process was announced for a new MSW plant in Warsaw, Poland. This is due to become operational in early 2019.

[Click map for full details](#)



MSW accounted for just over 5.4 million tonnes of capacity in May 2016, equal to 35.2% of the total, and an average of 705 tonnes per day. The other major feedstock categories were organic materials, plant biomass, sewage/wastewater and wood.



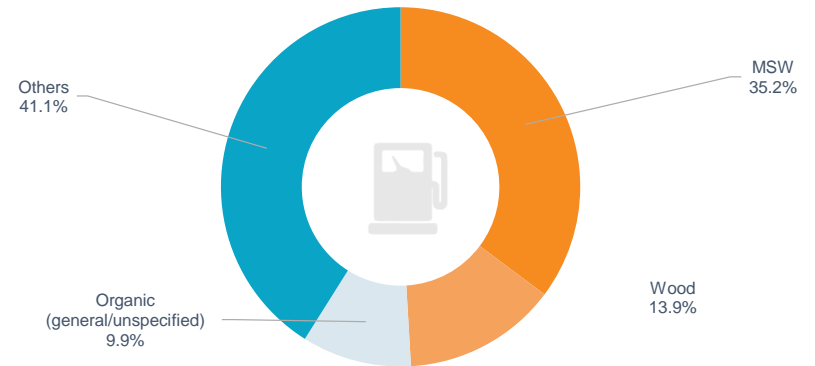
Latest Monthly Projects by Feedstock Type (May 2016)

	Projects	Annual Capacity (tonnes)	Average Annual Capacity (tonnes)	Average Tonnes Per Day
Animal	1	424,190	424,190	1,326
Clinical	1	803	803	3
Construction/Demolition	2	507,500	253,750	793
e-Waste	0	0	-	-
Food	2	78,852	39,426	123
Gas	1	0	-	-
Glass	4	433,150	108,287	338
Hazardous	3	66,925	22,308	70
Heat	0	0	-	-
Industrial	1	129,363	129,363	404
Metals	3	602,346	200,782	627
MSW	24	5,411,421	225,476	705
Oil	1	36,000	36,000	113
Organic (general/unspecified)	7	1,516,699	216,671	677
Paper	1	49,202	49,202	154
Plant Biomass (non-waste)	2	1,496,649	748,324	2,339
Plant Biomass (waste)	9	1,230,906	136,767	427
Plastics	2	91,733	45,867	143
Radioactive	0	0	-	-
Rubber	1	37,437	37,437	117
Sewage/wastewater	5	1,109,949	221,990	694
Wood	10	2,132,476	213,248	666
Other	1	16,294	16,294	51
Total	81	15,371,894	192,149	600

Reported Capacity by Feedstock, % of Total (May 2016)

	Capacity as % of Total
Animal	2.8
Clinical	0.0
Construction/Demolition	3.3
e-Waste	-
Food	0.5
Gas	-
Glass	2.8
Hazardous	0.4
Heat	-
Industrial	0.8
Metals	3.9
MSW	35.2
Oil	0.2
Organic (general/unspecified)	9.9
Paper	0.3
Plant Biomass (non-waste)	9.7
Plant Biomass (waste)	8.0
Plastics	0.6
Radioactive	-
Rubber	0.2
Sewage/wastewater	7.2
Wood	13.9
Other	0.1
Total	100.0

% Capacity by Feedstock, May 2016



Municipal Solid Waste accounted for 35.2% of waste capacity in projects covered in the Business Finder database in May 2016.



Latest Power Generation

In May 2016, estimated annual power generation amounted to 1,132 MW in total. 51.6% of this was from WtE incineration with most of the remainder coming from gasification, worth 27.8% of the total.

Incineration amounted to 22 projects with total estimated generation of 584 MW, equal to 28 MW per plant. Much of the gasification figure of 315 MW comes from a proposed 300 MW plant to be located at an undecided site in Europe.



WtE incineration and gasification dominated the reported power generation of projects in May 2016.

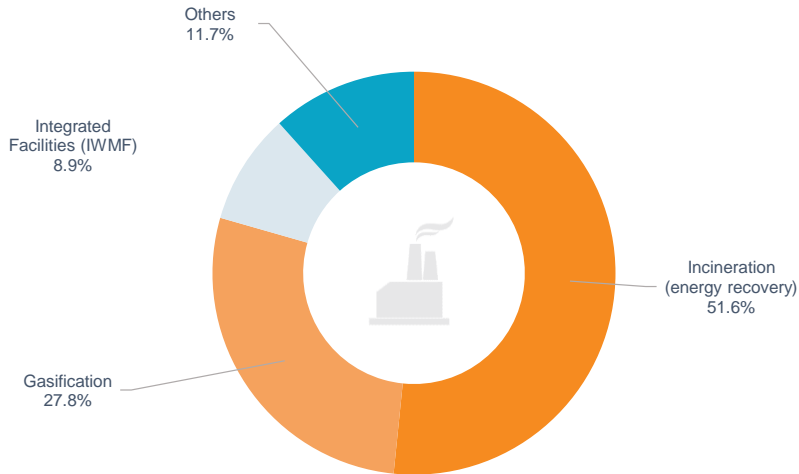
Estimated Power Generation of Projects Listed by Facility Type (May 2016)

	Projects	With Reported MW Generation	Estimated Annual MW Generation	Average MW Generation
Anaerobic Digestion	6	6	16	3
Biofuel	6	6	95	16
Biogas	4	4	13	3
Gasification	2	2	315	158
Incineration (energy recovery)	22	21	584	28
Incineration (no energy recovery)	4	0	0	-
Integrated Facilities (IWMF)	2	2	101	50
Landfill	7	1	8	8
MBT	0	0	0	-
Recycling	18	0	0	-
Waste Processing	8	0	0	-
Others	2	0	0	-
Total	81	42	1,132	27

Latest Estimated Power Generation by Facility Type, % of Total (May 2016)

	% of Total Projects
Anaerobic Digestion	1.4
Biofuel	8.4
Biogas	1.2
Gasification	27.8
Incineration (energy recovery)	51.6
Incineration (no energy recovery)	-
Integrated Facilities (IWMF)	8.9
Landfill	0.7
MBT	-
Recycling	-
Waste Processing	-
Others	-
Total	100.0

% MW Generation by Facility Type, May 2016



In May 2016, 51.6% of proposed power generation was through incineration, principally using wood, plant biomass, other organic materials and MSW as feedstocks.



Latest Estimated Power Generation of Projects Listed by Feedstock Type (May 2016)

	Projects	With Reported MW Generation	Estimated MW Generation	Average MW Generation
Animal	1	1	2	2
Clinical	1	0	0	-
Construction/Demolition	2	0	0	-
e-Waste	0	0	0	-
Food	2	2	3	2
Gas	1	1	8	8
Glass	4	0	0	-
Hazardous	3	0	0	-
Heat	0	0	0	-
Industrial	1	1	10	10
Metals	3	0	0	-
MSW	24	11	305	28
Oil	1	1	16	16
Organic (general/unspecified)	7	6	422	70
Paper	1	0	0	-
Plant Biomass (non-waste)	2	2	65	32
Plant Biomass (waste)	9	6	96	16
Plastics	2	0	0	-
Radioactive	0	0	0	-
Rubber	1	0	0	-
Sewage/wastewater	5	1	2	2
Wood	10	10	204	20
Other	1	0	0	-
Total	81	42	1,132	27

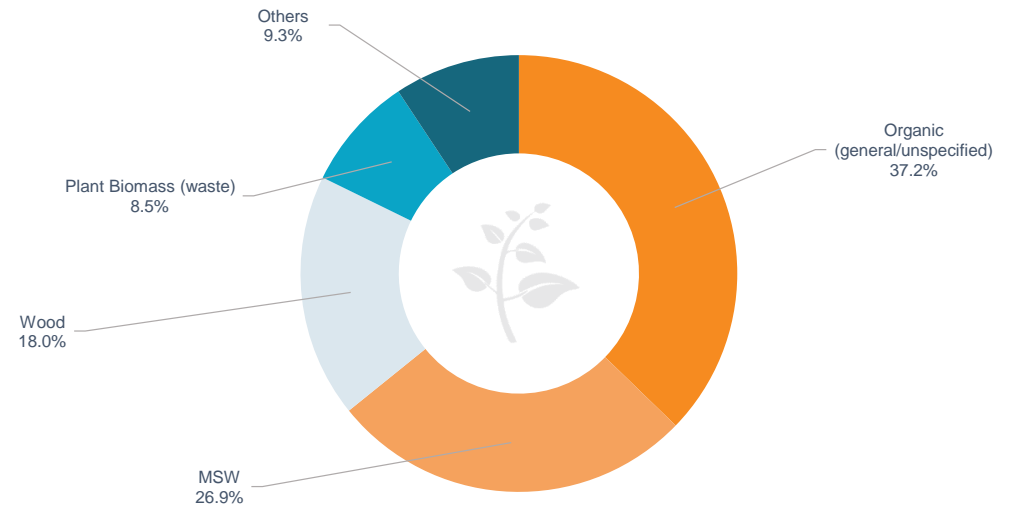
Latest Estimated Power Generation by Feedstock Type, % of Total (May 2016)

	MW Generation as % of Total
Animal	0.1
Clinical	-
Construction/Demolition	-
e-Waste	-
Food	0.3
Gas	0.7
Glass	-
Hazardous	-
Heat	-
Industrial	0.9
Metals	-
MSW	26.9
Oil	1.4
Organic (general/unspecified)	37.2
Paper	-
Plant Biomass (non-waste)	5.7
Plant Biomass (waste)	8.5
Plastics	-
Radioactive	-
Rubber	-
Sewage/wastewater	0.2
Wood	18.0
Other	-
Total	100.0

Biomass and 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, May 2016



Latest Country Focus

The USA was the leading country in May 2016 in terms of new projects reported, with 13 in total. This was followed by the UK with nine and Canada with seven.

In terms of estimated value, Australia was the leader, with US\$807 million or 14.3% of the total. This was followed by the USA and Hong Kong with US\$678 million and US\$645 million respectively.



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

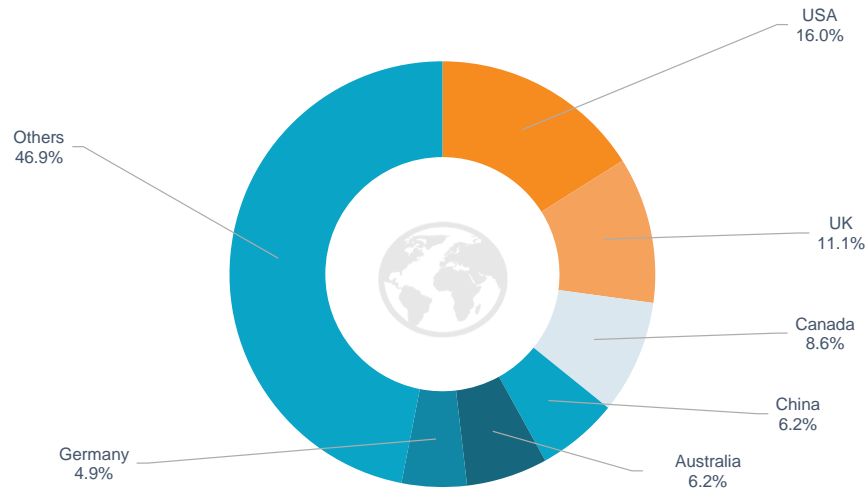
Top Ten Countries (number of projects listed), May 2016

	Projects	% of Total
USA	13	16.0
UK	9	11.1
Canada	7	8.6
China	5	6.2
Australia	5	6.2
Germany	4	4.9
Thailand	3	3.7
Finland	3	3.7
United Arab Emirates	2	2.5
Russia	2	2.5
Subtotal	53	65.4
Others	28	34.6
Total	81	100.0

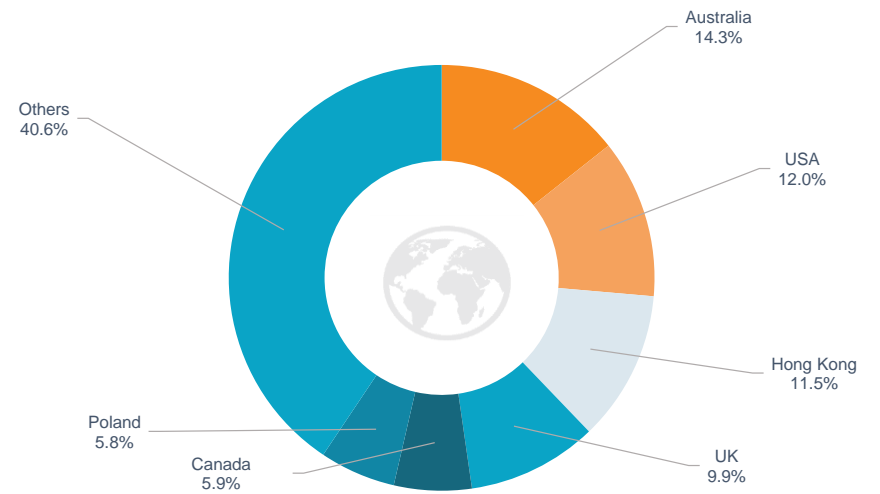
Top Ten Countries (estimated value of projects listed), May 2016

	US\$ millions	% of Total
Australia	807	14.3
USA	678	12.0
Hong Kong	645	11.5
UK	557	9.9
Canada	332	5.9
Poland	325	5.8
Brazil	316	5.6
China	201	3.6
Thailand	192	3.4
Finland	172	3.1
Subtotal	4,226	75.0
Others	1,405	25.0
Total	5,631	100.0

Leading Countries, Number of Projects, May 2016



Leading Countries, Value of Projects, May 2016



Operational Date Focus

Of the 81 projects reported on in May 2016, one is already in operation, valued at US\$88 million. A further 29 are estimated to become operational in 2016, worth a total of US\$1,501 million. For 2017, 15 projects are expected to become operational, worth US\$678 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 (May 2016)

	Number of Projects	Value (US\$ millions)
Already operational	21	1,252
Q4-2015	0	n/a
Q1-2016	0	n/a
Q2-2016	0	n/a
Q3-2016	2	62
Q4-2016	7	274
Q1-2017	2	35
Q2-2017	4	239
Q3-2017	4	151
Q4-2017	5	253
Q1-2018	4	106
Q2-2018	5	269
Q3-2018	7	126
Q4-2018	7	354
2019+	13	2,118

Estimated Value of Investments by Operational Date, 2016-2019 (US\$ millions)

