

CEWEP

Country report 2018

Germany



“Municipal Waste” (MW) means waste from households as well as commercial, industrial and institutional waste, which because of its nature and composition is similar to waste from households (excluding hazardous waste).

“Solid Recovered Fuels” (SRF):- solid fuel prepared from non-hazardous waste to be utilised for energy recovery in incineration or co-incineration plants, and meeting the classification and specification requirements laid down in CEN/TS W100343003.

“Refuse Derived Fuels” (RDF): broader than definition of SRF. In the Country Report only RDF expression is used and it comprises SRF as well.

A. Amount of Waste

In your <u>country</u> in million tonnes (Reference year: 2016)	
Total amount of Municipal Waste (MW): MW production / inhabitant / year: ____ kg/inhabitant	462
Total amount of household waste	38.1 Mill.
Total amount of commercial/industrial/institutional waste similar to household waste	??
Total amount of industrial/commercial waste	??
Total amount of waste	411.5 Mill.t

B. Treatment of Waste

In your <u>country</u> (concerning MW) in million tonnes (Reference year: 2016)	
Recycling (including composting)	??
Incineration	??
Landfilling	No (since 2005) – only residues from mechanical biological treatment, but no MW (amount ??)

Total Amount of thermally treated waste in million tonnes (Reference year: 2016/2017)	
In WtE plants/dedicated RDF plants	25,98 Mill. T (2016)
In Cement kilns	3.59 Mill. T (2017)

Number of plants (Reference year: 2016/2017)	
WtE plants	66
Dedicated RDF plants	30
R1 plants	Nearly all

Capacity development in your <u>country</u> (Please include retrofitted/closing facilities)	Years			
	2019 – 2025		After 2025	
	Additional Capacity, ktonnes	Additional number of plants	Additional Capacity, ktonnes	Additional number of plants
Planned additional Waste-to-Energy plants:	190,000	1	unknown	
Planned additional RDF plants:	unknown		unknown	

All (if it is not possible to specify separately)				
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C. Energy production in Waste-to-Energy and dedicated RDF plants

1. Total Electricity and Heat production in Waste-to-Energy and dedicated RDF plants

Reference year: 2017

Total Electricity and Heat production in Waste-to-Energy plants and dedicated RDF plants	
Reference amount of thermally treated waste in million tonnes:	23.49 Mill. T (only ITAD Members)
Number of plants:	78
Electricity produced in million MWh/ year	10.29
Electricity exported in million MWh/ year	8.01
Heat* produced in million MWh/ year	Unknown (10470 kJ/kg)
Heat* exported in million MWh/ year	20.28

* incl. heating, cooling and steam

2. Recognition of energy produced in Waste-to-Energy and RDF plants as renewable

How much %? (Please indicate if it refers to energy production or waste input): **50 % (official)**

Contribution of WtE to the production of renewable energy in your country (%) _____

D. Residues

Reference year: estimation 2017 (only ITAD Members)

Slag/bottom ash	
Annual amount in million tonnes:	6.34
Method of utilisation or disposal (%): (road construction, cement production, construction block fabrication, landfill: considered as recovery (e.g. as layer) or disposal?)	Road construction and landfill
Recovery of metals	
Annual amount (%):	
Ferrous (F) material extracted (gross weight, %):	7.7
Non Ferrous (NF) material extracted (gross weight, %):	1.3
Typical composition of the NF fraction (% Al, other NF, inert):	unknown

FGC (Flue Gas Cleaning) residues, (incl. filter dust and boiler ash)	
Annual amount in million tonnes:	1.17

Method of treatment or disposal (e.g. salt mine, hazardous landfill site, stabilisation, immobilization and use as asphalt filler):	Salt mine
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E. Waste shipments of MUNICIPAL and SIMILAR WASTE

Into/from your country, reference year: ____

	<u>MW</u>	<u>RDF</u>
Shipments in	s. below	s. below
Shipments out	s. below	s. below

(if possible please indicate the countries to/from which the shipments are made)

F. Responsibilities Public - Private

Type of waste:	Responsibility for <u>treatment</u> : Public/Private	Responsibility for <u>collection and transport</u> : Public/Private	Municipalities' responsibility for <u>monitoring</u> : Yes/No
from private households	Public	Public	Public
commercial waste similar to household waste	Public/Private	Public/Private	Public/Private
industrial/commercial waste	Private	Private	Private
hazardous waste	Private	Private	Private

G. Refuse Derived Fuels (RDF)

	In million tonnes (Year <u>2016</u>)
MW input in Mechanical-Biological Treatment (MBT)	3.95 (55 plants)
Production of RDF	2.24 (191212/191210)
Planned capacity (of MBT)	unknown

H. Taxes

1. Waste-to-Energy taxes for Municipal Waste (MW)

Reference year: _____

	Tax in €/tonne MW	Tax for export in €/tonne MW	Tax for import in €/tonne MW	Other tax (e.g. CO ₂ , energy)	Rules to avoid double taxation if MS of destination and of dispatch have taxes
Incineration	no	no	no	no	
Co-Incineration	no	no	no	no	

Additional comments:

2. Landfill taxes and bans

Reference year: no

Average Net fee for landfilling in €/tonne	VAT (Value Added Tax) rate %	Landfill <u>tax</u> in €/tonne (If landfill tax is planned please indicate when and the amount planned)	Total price for landfilling €/tonne MW	Landfill <u>ban</u> (If landfill ban is planned please indicate when and for what type of waste)

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Additional comments:

I. Employment

The amount of employment created by the Waste-to-Energy industry

Number of jobs (full time equivalent) per WtE plant including operation process, administration and outsourced personnel hired on a regular basis, i.e. during maintenance.

Nearly 7000 direct (ITAD members)

J. Additional data

Abfallarten	Haushalts- abfällen	spez. Aufkommen
	1000 t	kg/E
2016		
Haus- und Sperrmüll	15539,7	188
Hausmüll, hausmüllähnliche Gewerbeabfälle	13137,4	159
Sperrmüll	2402,3	29
Getrennt erfasste organische Abfälle	10183,4	123
Abfälle aus der Biotonne	4828,7	59
Biologisch abbaubare Abfälle (Garten-,Parkabfälle)	5354,7	65
Getrennt erfasste Wertstoffe	12211,6	148
Glas	1879,2	23
Gemisch.Wertst./Verpack.(inkl.Leichtvp.),Verbunde	2754,3	33
Papier, Pappe, Karton (PPK)	5710,9	69
Metalle	302,5	4
Holz	1299,2	16
Kunststoffe	123,8	2
Textilien	141,7	2
Elektroaltgeräte	.	.
Sonstige Abfälle	168,4	2
Sonstige gefährliche Abfälle	58,1	1
Sonstige nicht gefährliche Abfälle	110,3	1
Insgesamt	38103,1	462

Abfallarten	Haushalts- abfällen	spez. Aufkommen
	1000 t	kg/E

2017

Haus- und Sperrmüll	15558,6	188
Hausmüll, hausmüllähnliche Gewerbeabfälle	13092,6	158
Sperrmüll	2466	30
Getrennt erfasste organische Abfälle	10318	125
Abfälle aus der Biotonne	4903,5	59
Biologisch abbaubare Abfälle (Garten-,Parkabfälle)	5414,5	65
Getrennt erfasste Wertstoffe	12235,6	148
Glas	1887,4	23
Gemisch. Wertst./Verpack.(inkl. Leichtvp.), Verbunde	2753,2	33
Papier, Pappe, Karton (PPK)	5675,6	69
Metalle	314,6	4
Holz	1302,5	16
Kunststoffe	133,8	2
Textilien	168,5	2
Elektroaltgeräte	.	.
Sonstige Abfälle	161,6	2
Sonstige gefährliche Abfälle	62,1	1
Sonstige nicht gefährliche Abfälle	99,5	1
Insgesamt	38273,7	462

Deutsche Im- und Exporte von Ersatzbrennstoffen und gemischten Siedlungsabfällen zur Verbrennung (R1/D10)

in Tonnen	2017	2016	2015	2014	2013
Abfallart	IMPORTE				
Brennbare Abfälle aus der mechanischen Abfallbehandlung (AS 191210)	831.365	925.329	975.636	961.562	510.386
Materialmischungen aus der mechanischen Abfallbehandlung (AS 191212)	167.761	260.446	363.423	299.912	269.981
Gemischte Siedlungsabfälle (AS 200301)	182.813	417.760	375.473	402.440	330.379
Gesamt	1.181.939	1.603.535	1.714.532	1.663.914	1.110.746
davon aus					
Großbritannien	679.097	756.427	748.925	584.916	182.030
Niederlanden	312.297	568.222	651.257	664.771	603.085
Frankreich	70.636	99.238	79.495	42.213	33.514
Irland	49.050	76.407	96.939	144.353	80.863
Belgien	30.821	44.744	73.667	107.908	127.358
Italien	19.876	15.984	18.805	20.214	16.664
Österreich	12.536	15.133	17.874	32.988	23.648
Polen	5.623	5.044	16.709	53.336	34.090
Übrige Länder	2.003	22.336	10.861	13.215	9.494
Abfallart	EXPORTE				
Brennbare Abfälle aus der mechanischen Abfallbehandlung (AS 191210)	247.326	190.151	139.527	134.581	110.080
Materialmischungen aus der mechanischen Abfallbehandlung (AS 191212)	290.112	194.014	137.068	95.848	117.333
Gemischte Siedlungsabfälle (AS 200301)	158.967	161.030	156.256	154.281	156.274
Gesamt	696.405	545.195	432.851	384.710	383.687
davon nach					
Schweiz	309.029	297.415	253.690	215.526	217.432
Dänemark	113.328	55.577	22.185	18.811	13.498
Niederlande	107.337	69.004	56.374	57.361	63.188
Tschechien	44.824	28.533	30.306	25.357	24.563
Österreich	32.884	10.624	3.112	2.654	1.294
Polen	23.599	9.390	9.127	16.297	22.794
Luxemburg	22.494	19.968	17.370	10.695	9.520
Schweden	16.001	36.323	30.780	22.351	24.805
Übrige Länder	26.909	18.361	9.907	15.658	6.593

Quelle: Umweltbundesamt; eigene Berechnungen

(ohne Gewähr)