

CEWEP

Country report 2018

Sweden



“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: 2017)	
Total amount of Municipal Waste (MW): MW production / inhabitant / year: 473 kg/inhabitant (2017) 467 kg/inhabitant (2016)	2017: 4.783 (incl similar waste) 2016: 4.666 (incl similar waste)
Total amount of household waste	*
Total amount of commercial/industrial/institutional waste similar to household waste	*

Total amount of industrial/commercial waste	No data available
Total amount of waste	2016: 142 million tonnes generated incl mining waste. 31.9 million tonnes excl mining waste*

* There are no separate data on similar waste. Waste from households and similar commercial, industrial and institutional waste is included in the total amount of MW.

* Data from the Swedish EPA, 2016

B. Treatment of Waste

In your <u>country</u> (concerning MW) in million tonnes (Reference year: 2016, 2017)	
Recycling (including composting and biogas/ bio fertiliser production)	2017: 2.356 (0.741) 2016: 2.373 (0.757)
Incineration	2017: 2.400 2016: 2.263
Landfilling	2017: 0.023 2016: 0.031

Total Amount of thermally treated waste in million tonnes (Reference year: 2016, 2017)	
In WtE plants/dedicated RDF plants **	2017: 2.400 (All waste 6.150) 2016: 2.262 (All waste 6.003)
In Cement kilns	2017: 0.015 2016: 0.042

** Data only refers to waste (both MS and industrial) treated in plants incinerating MS or more than 40% hazardous waste. Data does not include waste incinerated in traditional co-incinerators

Number of plants (Reference year: 2106, 2017)	
WtE plants	35
Dedicated RDF plants	-
R1 plants	35

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:	300	1		
Planned additional RDF plants:				
All (if it is not possible to specify separately)				

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: 2016, 2017

Total Electricity and Heat production in Waste-to-Energy plants and dedicated RDF plants	
Reference amount of thermally treated waste in million tonnes:	2016: 6.003 2017: 6.150
Number of plants:	2016/2017: 35
Electricity produced in million MWh/ year	2017: See below 2016: See below
Electricity exported in million MWh/ year	2017: 2.242 2016: 2.200
Heat* produced in million MWh/ year	2017: 16,10 2016: 15.93
Heat* exported in million MWh/ year	2017: 14.8 2016: 13.51

* incl. heating, cooling and steam

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

FROM 2016:

How much %? 64 % of C-content in the waste input is renewable (according to NIR-data)

Contribution of WtE to the production of renewable energy in your country (%) \approx 5.2 %

If energy production from food waste, other than energy recovery in WtE plants (AD), is included: \approx 5.5%

D. Residues

Reference year: 2016, 2017

Slag/bottom ash	
Annual amount in million tonnes:	1 (2016 and 2017)
Method of utilisation or disposal (%): <small>(road construction, cement production, construction block fabrication, landfill: considered as recovery (e.g. as layer) or disposal?)</small>	100 % recovery, as a construction material on landfills .
Recovery of metals	
Annual amount (%):	Approx. 7,2 % (2016/2017)
Ferrous (F) material extracted (gross weight, %):	2017: 5,4 %
Non Ferrous (NF) material extracted (gross weight, %):	2017: 1,8 %
Typical composition of the NF fraction (% Al, other NF, inert):	

Not all plants have reported. Concerning F-metals: only 15 plants reported data, with a total slag production of ≈500 000 tonnes in 2017. Concerning NF-metals: only 10 plants reported data, with a total slag production of ≈290 000 tonnes in 2017.

F: 27 654 F-metals/ 500 000 tonnes slag ≈ 5.4%

NF: 5400 tonnes NF-metals/ 292 000 tonnes of slag ≈ 1.8%)

Probably the same figures for 2016.

FGC (Flue Gas Cleaning) residues, (incl. filter dust and boiler ash)	
Annual amount in million tonnes:	2017: 0,288 2016: 0,297
Method of treatment or disposal <small>(e.g. salt mine, hazardous landfill site, stabilisation, immobilization and use as asphalt filler):</small>	Non-haz or haz landfill, Langöya stabilization/ Immobilization – refilling quarry

E. Waste shipments of MUNICIPAL and SIMILAR WASTE

	<u>MW</u>	<u>RDF/Total Industrial+MW</u>
Shipments in	2017: 534 720 tonnes 2016: 419 100 tonnes	2017: 1 480 800 tonnes 2016: 1 388 720 tonnes
Shipments out	-	-

F. Responsibilities Public - Private

Type of waste:	Responsibility for treatment: <u>Public/Private</u>	Responsibility for collection and transport: <u>Public/Private</u>	Municipalities' responsibility for monitoring: Yes/No
from private households	Residual and food waste: Public	Residual and food waste: Public	Yes

	Packaging and paper: Private	Packaging and paper: Private	
commercial waste similar to household waste	Residual and food waste: Public Packaging and paper: Private/ open	Public	Yes
industrial/commercial waste	Private/ open market	Private/ open market	No
hazardous waste	Public	Public	Yes

G. Refuse Derived Fuels (RDF)

	In million tonnes (Year_____)
MW input in Mechanical-Biological Treatment (MBT)	-
Production of RDF	-
Planned capacity (of MBT)	-

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					
Co-Incineration					

Additional comments:

2. Landfill taxes and bans

Reference year: 2017

Average Net fee for landfilling in €/ton ne	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)
90 (900 SEK)		50 (500 SEK)		Ban on organic (2005) and combustible waste (2002)

Additional comments: