

CEWEP Country Report 2016

Portugal



"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>	Year: 2014	In million tonnes
Total amount of Municipal Waste (MW): MW production / inhabitant / year: 454 kg/inhabitant	2014	4.719 (*)
Total amount of household waste		
Total amount of commercial/industrial/institutional waste similar to household waste		

(*) Source: APA–portuguese environment Agency, RARU 2014

Total amount of industrial/commercial waste		
Total amount of waste		

B. Treatment of Waste

In your <u>country</u> (concerning MW)	%	Year ____	In million tonnes (*)
Recycling (including composting)	30	2014	1.430
Incineration	21	2014	0.974
Landfilling	49	2014	2.307

(*) source: PORDATA. <http://www.pordata.pt/>

Total Amount of thermally treated waste in million tonnes	Country	Organisation/ company
In WtE plants/dedicated RDF plants	0.974	0.974
In Cement kilns	(*)	0

(*) 104 951 ton of RDF from MSW were produced. Some of was used in cement kilns, however the exact figure is unknown.

Number of	Country	Organisation/ company
WtE plants	3	3
Dedicated RDF plants	0	0
R1 plants	3	3

Capacity development in your <u>country</u>	Years			
	2017 – 2020		2021 – 2025	
	Additional Capacity, ktonnes	Additional number of plants	Additional Capacity, ktonnes	Additional number of plants
Planned Waste-to-Energy plants:	140	2 (*)		
Planned RDF plants:				
All (if it is not possible to specify separately)				

(*) one plant 40ktpy started operating December 2015 and another (100kpy) is expected for late 2017

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: 2014 (if data from 2015 are available, please add them and specify the year)

Total Electricity and Heat production	Waste-to-Energy plants and dedicated RDF plants	
	Country	Organisation/company
Reference amount of thermally treated waste in million tonnes:	1.05 (*2)	1.05 (*2)
Number of plants:	3	3
Electricity produced in million MWh/ year	0.49	0.49
Electricity exported in million MWh/ year	0.414	0.414
Heat* produced in million MWh/ year	0	0
Heat* exported in million MWh/ year	0	0

* incl. heating, cooling and steam

(*2) information from the companies

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): _____

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

In your country	Electricity	Heat
Market price per kWh in €cent/kWh		
Subsidy or market based instruments (Please specify e.g. green certificates, feed in tariffs)	Feed in tariff	
Price incl. subsidy or market based instruments in €cent/kWh	83-86 €/MWh	

D. Residues

Reference year: 2014 (if data from 2015 are available, please add them and specify the year)

Slag/bottom ash	Country	Organisation/company
Annual amount in tonnes:	187.023 ton	AVALER members: 3 plants
Method of utilisation or disposal (%): (road construction, cement production, construction block fabrication, landfill)	Stock for further civil works use – 25% Landfill – 23% Landfill cover cells – 45% Metals recovery – 7%	Estimation for the global amounts of the 3 plants

Recovery of metals: <ul style="list-style-type: none"> • Annual amount (%): • Ferrous (F) material extracted (gross weight, %): • Non Ferrous (NF) material extracted (gross weight, %): • Typical composition of the NF fraction (% Al, other NF, inert): 	Metals recovery 2014: 12.348 ton	Full amount- 3 plants
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FGC (Flue Gas Cleaning) residues, (incl. filter dust and boiler ash)	Country	Organisation/company
Annual amount in million tonnes:	72.581	Full amount- 3 plants
Method of treatment or disposal (e.g. stabilisation, salt mine, hazardous landfill site):	Mix with cement and water and sent to special landfill cells	

E. Export and Import of MUNICIPAL and SIMILAR WASTE

Into/from your country, reference year: 2014 (if data from 2015 are available, please add them and specify)

	MSW	RDF
Export	Irrelevant or null	
Import	Irrelevant or null	

In 2014 Pt imported 61.543 ton and exported 57.079 ton of waste but not MSW or similar

Source: http://www.apambiente.pt/_zdata/Politiclas/Residuos/MTR/Relatorio_MTR_2014_v3.pdf

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	yes
commercial waste similar to household waste	Public if production <1,100L/day, otherwise private	Public if production <1,100L/day, otherwise private	yes
industrial/commercial waste	private	private	private
hazardous waste	private	private	private

G. Refuse Derived Fuels (RDF)

In your country, reference year: 2014

1. **Amount** of RDF/year
 - a. **Current Production:** 104.951 ton (it includes final RDF, as well as material for RDF)
(source: APA- Portuguese Environment Agency)
 - b. **Potential:** _____
2. **Experience (market development etc.):** _____
3. **Capacity for mechanical-biological treatment/ year**
Currently: _____
Planned: _____

H. Prices and taxes

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

Reference year: 2014

Average Net fee in €/tonne	VAT (Value Added Tax) rate %
20-30	5%

	Tax in €/tonne MW	Tax for export in €/tonne MW	Tax for import in €/tonne MW	Rules to avoid double taxation if MS of destination and of dispatch have taxes	Comments
Incineration	1,2				
Co-Incineration	1,2				

Waste-to-Energy total price in €/tonne MW _____

2. Landfill taxes and bans

Reference year: 2014

Average Net fee for landfilling in €/tonne	VAT (Value Added Tax) rate %	Landfill tax in €/tonne (If landfill tax is planned please indicate when and the amount planned)	Total price for landfilling €/tonne MW	Landfill ban (If landfill ban is planned please indicate when and for what type of waste)
	5%	4,5		

I. Investment

- The average investment cost per tonne of annual capacity (for a new plant, considering 15-20 years operation):
- Investment cost regarding flue gas cleaning system (% of total investment):
- The average investment cost per MW heat and electricity installed respectively:

J. Employment

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

Jobs (full time equivalent) per WtE plant including operation process, administration and outsourced personnel hired on regular basis i.e. during maintenance (reference to total capacity): Close to 300 employees in the three plants, for a total capacity around 1 million tons a year.

You can also provide this information in another unit, e.g. jobs per 100,000 t/a capacity