

Capital factsheet on separate collection

Note: This 'Capital factsheet' has been prepared within the EC study "Assessment of separate collection schemes in the 28 capitals of the EU". The document represents the status-quo of the EU Member States capitals in May 2015. The information included in this document has been elaborated for all 28 EU-capitals based on expert interviews with various stakeholders on capital level, e.g. capital administrations, waste management operators, associations etc. as well as further publically available reports, statistics and websites.

All information is cited in the factsheet and a complete list of information sources including the interviews held can be found at the end of this document.

Madrid		Spain				
<p>SUMMARY: In Madrid only household waste is collected separately by the co-mingled door-to-door collection of packaging waste (excluding commercial like household waste). The other waste streams paper/cardboard and glass are mainly collected by bring points. There is no separate collection of bio-waste which should be introduced. 11.6 % of total municipal waste generation was collected separately in 2014.</p>						
1 Capital general data						
City population (inhabitants)	3 165 235 (2014) value indicates only the resident population for the given year and do not account the temporary population (e.g. tourists, workers) [1]. Registered citizens and temporary population (2014): 3 709 696 [5]					
City area (km ²)	604.3 (2014) [1]					
City density (persons/km ²)	5 237.9 (2014) [1]					
City climate	Mediterranean					
2. Capital waste data						
Total (municipal) waste generation (t in indicated year)	1 219 623 t (in 2014), this value includes household (Mix waste, packaging, glass, Paper and cardboard, bulky waste, dead animals and household especial waste depot) and economic activity waste [5]					
Total (municipal) waste generation (kg/cap)	385.3 kg/cap (in 2014)					
Total separate collection (kg/cap) & (% of generation)	11.6 % of total municipal waste generation was collected separately in 2014 (packaging, glass and paper amount to 141 019 t) this represents 44.6 kg/cap. The only fraction that is not collected separately is the Commercial and Institutional waste and the Street Cleaning System stream [5]					
Percentage breakdown of total collection for separate collection by fraction	Breakdown of total waste generation, separated by fraction in %: [5]					
	HOUSEHOLD WASTE	Selective collection	FRACTION	2014 GENERATION (t)	% by fraction	Kg/cap
			Mix waste	858 135	70.36%	271.1
			Packaging	64 316	5.27%	20.3
			SUBTOTAL	922 451	75.63%	291.4
			Glass	40 334	3.31%	12.7
			Paper and cardboard	36 369	2.98%	11.5
		SUBTOTAL	7 703	6.29%	24.2	
		Bulky waste	5 795	0.48%	1.8	
Dead animals			177	0.01%	0.06	

	Other separate collections	Household Special Waste Depot ¹	6 986 ¹	0.57%	2.2
		SUBTOTAL	12 958	1.06%	4.1
TOTAL HOUSEHOLD WASTE			1 012 112	82.99%	319.7
ECONOMIC ACTIVITY WASTE PRODUCTION	Street cleaning services		114 726	9.41%	36.2
	Commercial and institutional waste		92 785	7.61%	29.3
	TOTAL ECONOMIC ACTIVITY WASTE PRODUCTION		207 511	17.01%	65.5
MADRID'S CITY TOTAL DOMESTIC WASTE PRODUCTION			1 219 623	100%	385.2

3. Description of overall separate collection systems operating in the city

Under the Law 7/1985 of 2 April 1985 and the Law 22/2011 of 28 July 2011, Madrid city council is responsible for the waste management) in the city (collection, transportation and treatment). Currently the waste collection, transportation and treatment services under the management of the Madrid City Council are conducted by concession holder.

Madrid city has a comprehensive waste management system (WMS) which includes collection, transport, recovery and disposal of household waste and waste generated in the economic activity of the city, including the supervision of such operations and the after-care of the treatment and disposal sites. [5]

The WMS collects and treats the following fractions or streams of waste:

- **Packaging:** This fraction mainly includes different types of plastic, metals (ferromagnetic and non-ferromagnetic-aluminium) and tetra pack. Co-mingled door-to-door is the main collection system in use with some bring in collection points in place when no room for containers exist in the households buildings. As in the mixed fraction, the collection of the packaging is done in the central area of the city using 2 wheel containers (of 120 to 360 litres of capacity) given to each waste production centre (residential buildings, shops, etc.), and in the city outskirts using 4 wheel containers (of 800 to 3 200 litres of capacity) placed out in the streets, being part of the bring in collection points.
- **Paper and cardboard:** bring in collection points are the main scheme used to collect this fraction, as door-to-door collection is only available for state official buildings and some businesses.
- **Glass:** Bring in collection points are the main scheme used to collect this fraction, door-to-door collection is available for some businesses (VACRI system).
- **Bulky waste:** Is collected using several systems, door to door, bring-in Civic Amenity sites and through the cleaning of the city.
- **Dead animals:** collected on demand.
- **Household Special waste:** citizens are enforced by law to drop all these special wastes in household special waste depots or bring-in civic amenity sites. These special waste includes in broad terms, batteries, used lamps (fluorescents lamps, etc.), WEEE, textiles, CD's, DVD's, used cooking oil, contaminated packaging (like used paint cans and pots, ...), leftover of paints, solvents, varnishes, radiographies, construction waste, bulky waste, paper and cardboard, glass, etc. Each of these types of waste are collected and treated through **authorised waste managers**.

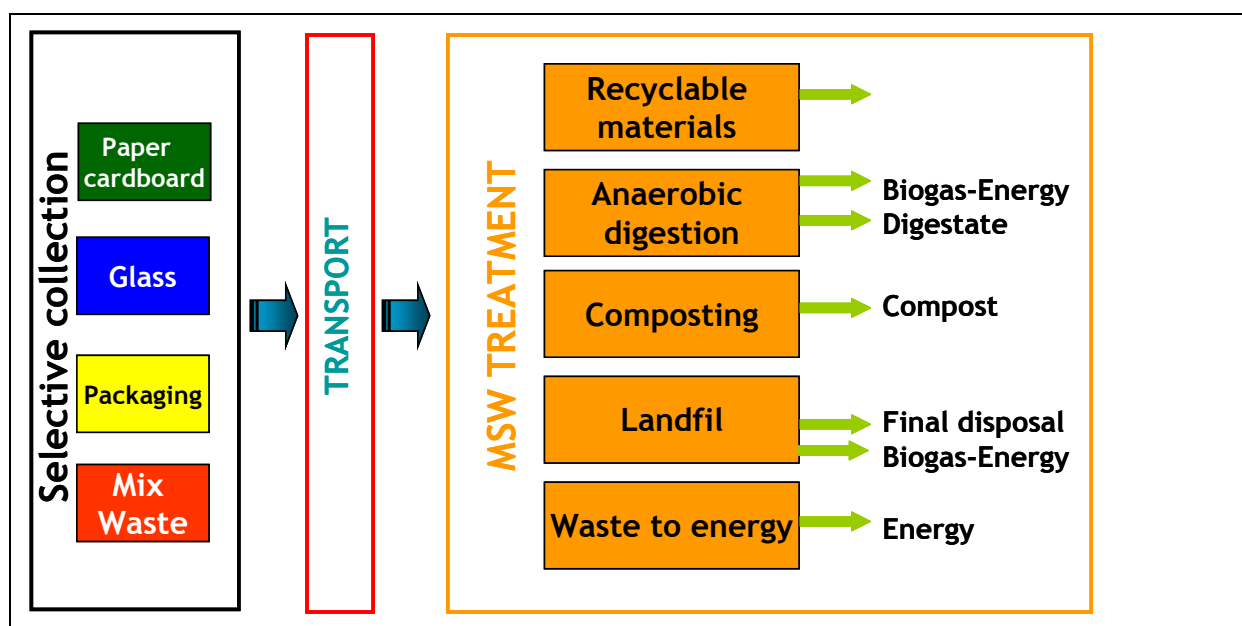
Collection frequency: in general terms 363 days per year for all fractions, with certain exceptions which are explained in the following pages.

Procurement system: Public tendering

Budget: municipal budget

Graphic description of the comprehensive waste management system operating tin Madrid city:

¹ Includes 715.22 t of P/C and 45.34 t of glass the citizens have dropped off in the Bring – in amenity sites.



Annual Running Costs:

Total cost:

- 115 431 168 € (2014) [4] total cost for the management of the separate collection scheme in the city. Breakdown of this figure:
 - Collection of the central area: 43 654 942 € (2014). The billing of this contract is done through the cost per tonne fee per fraction collected (mixed waste, Packaging, paper and cardboard, glass, ...). It is not possible to breakdown the cost considering the collection scheme (door to door, bring collection points, ...).
 - Collection of the peripheral area of the city: 63 699 793 € (2014). The billing is done as in the central area. No breakdown is possible considering the collection scheme.
 - Containerization: 6 610 614 € (2014). This contract includes the installation, management and maintenance of the fleet of containers.
 - Bring – in civic amenity sites: 1 465 818 € (2014). This contract includes the management of these installations.
- 71 042 501 € (2014), total cost for waste treatment in Valdemingomez Tech Park (www.madrid.es/valdemingomez).

Cost per tonne (€/t material), referred to 1 219 623 t of waste generated in 2014 (section 2 of this factsheet):




- 94.69 €/t for the separate collection scheme.
- 58.24 €/for the waste treatment.

Cost per inhabitant (€/cap), referred to Madrid city registered citizens in 2014:

- 36.47 €/cap for separate collection scheme.
- 22.44 €/cap for the waste treatment.

Setup costs: Not available.

Coverage: Not available.

4. Elements of the collection system	
MUNICIPALITIES OR THEIR CONTRACTORS	
 Door-to-door collection of co-mingled recyclables	
Fractions collected	Packaging waste
Collection frequency	Every two days (households and businesses)
Coverage of collection	Madrid city area
Annual collected quantities	Packaging: 62 985.10 t (2014)
Setup costs	Not available (see section above section 3 Annual Running Costs)
Running costs	Not available (see section above section 3 Annual Running Costs)
Source of funding	Municipal budget
Cost to consumer (annual)	36.01 €/cap (2014), cost per inhabitant for the whole separate collection scheme, except for the Bring – in Civic Amenity sites.
 Bring Collection Points	
Fractions collected	Packaging (only in the city central district), paper and cardboard, glass
Number of collection points	Paper and cardboard: 10 498 total (333,67 per 100 000 inhabitants) (2014) [3] Glass: 6 044 total (190,95 per 100 000 inhabitants) (2014) [3] Packaging: not available
Collected quantities	Packaging: 1 330.90 t (2014) city central district
	Glass: 40 334 t (2014)
	Paper and cardboard: 36 369 t (2014)
Setup costs	Not available (see section above section 3 Annual Running Costs)
Running costs	Not available (see section above section 3 Annual Running Costs)
Source of funding	Municipal budget
Cost to consumer (annual)	36.01 €/cap (2014) cost per inhabitant for the separate collection scheme, except for the Bring – in Civic Amenity sites.
 Bring-in Civic Amenity sites	
Fractions collected	Batteries, used lamps (fluorescents lamps, etc.), electric and electronic waste, clothes, garments, CD's, DVD's, used cooking oil, contaminated packaging (like used paint cans and pots, ...), leftover of paints, solvents, varnishes, radiographies, construction waste, bulky waste, paper and cardboard, glass, etc.
Number of sites	16 permanent sites, 222 mobil sites (total) 7.01 (per 100 000 inhabitants)
Collected quantities	Bulky waste: 5 790 t (2014)
	Household special waste: 6 986 t (2014) includes: 715 t of paper and cardboard 45 t of glass s
Setup costs	Not available
Running costs	1 465 818 € (2014)
Source of funding	Municipal budget

Cost to consumer (annual)	0.46 €/cap (2014) cost per inhabitant for the Bring – in Civic Amenity sites.				
5. Materials, Quantities and costs					
SUMMARY OF COLLECTION SYSTEMS IN PLACE					
Collected waste (t)	Paper and cardboard	Glass	Packaging (Plastic & Metal etc.)	Bio-waste	City Coverage
Door-to-door			62 985.10		Not available
Bring points	36 369	40 334	1 330.90		Paper and cardboard: 10 498 total (333,67 per 100 000 inhabitants) Glass: 6 044 total (190,95 per 100 000 inhabitants)
Civic amenities	Not available	Not available	Not available	Not available	16 and 222 + 7.01 per 100 000 inhabitants
Producer / Retailer take-back					
Total	36 369	40 334	64 316		
6. Recycling and losses					
RECYCLING OF THE COLLECTED WASTE					
Recycled (t)	Paper	Glass	Packaging	Total	
Generated	Not available	Not available	Not available	1 219 623	
Collected	36 369	40 334	64 316	141 019	
Recycled nationally²	36 369	40 334	23 677	100 380	
Exported for recycling	0	0	0	0	
Rejected³	0	0	40 639	40 639	

² This value includes the recycled materials recovered from the separate collection (P/C and glass) and the recycled materials sorted in Valdemingomez Tech Park (www.madrid.es/valdemingomez).

³ Part of the rejected material is used for energy recovery in a Waste to Energy facility inside the VTP, and part is sent to a controlled landfield, managed in cells with a degasifying process with valorisation of the biogas extracted.

References

- [1] Spanish National Statistics Institute website, www.ine.es, 2015
- [2] Madrid statistics factsheet (version 2), ACR+, 2012
- [3] Annual Report of the Services of the Urban Environmental Management Department of the Madrid City Council (DGAU), 2014
- [4] Madrid City Waste Management System, Environmental Affairs Department, Valdemingomez Technology Park Annual Report, 2014
- [5] Madrid City Council, information provided by José Luis Cifuentes Sastre in September 2015.