

Mexico , 11/09/2015

Waste management in the Area Metropolitana of Barcelona (AMB)

TAIEX Workshop on solid waste
integrated management in urban areas

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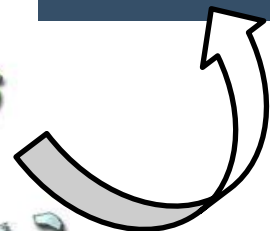
d) Financial sustainability

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What is AMB ?



Introduction



Introduction



	ESPAÑA (2014*)	CATALONIA (2014)	AMB (2014)
Area	504.645 km ²	32.114 km ²	636 km ²
Population	46.512.199 inhab	7.518.903 inhab	3.214.211 inhab
Population density	92 inhab/km ²	234 inhab/km ²	5.053 inhab/km ²
MSW production	22.395.811* t (* 2012)	3.650.849 t	1.377.952 t
MSW production per capita	1.31* kg/inhab/day (* 2012)	1.33 kg/inhab/day	1.17 kg/inhab/day

INTRODUCTION



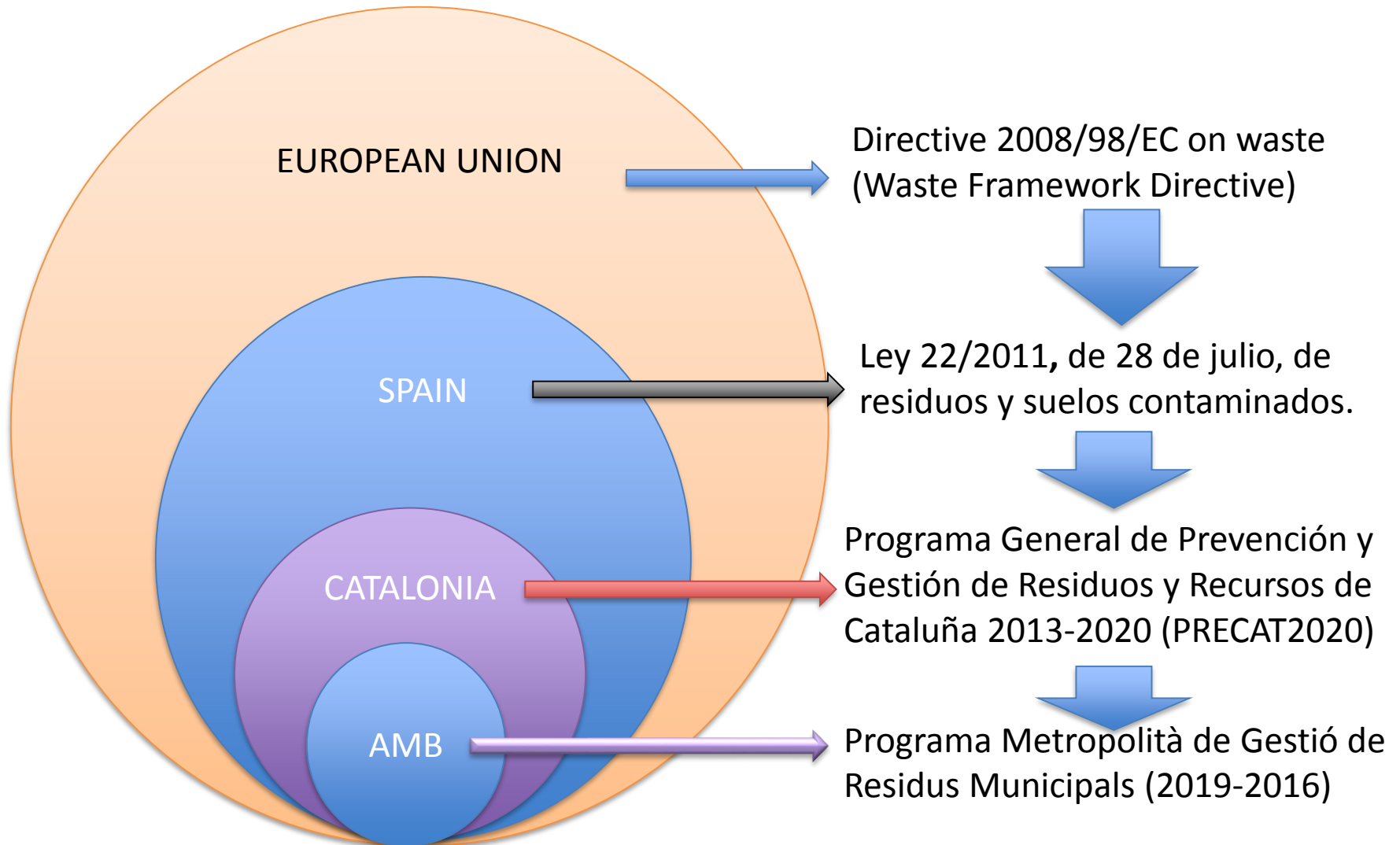
AMB is the Local Authority of metropolitan Barcelona. It is in charge of **Environment**, Urban Planning, Housing, Transportation and Mobility, and Economical Promotion of the Barcelona Metropolitan Area.

The Department of Environment of the **AMB** (100 people staff) is the provider of public services for the 36 Municipalities included in its territory. Among them:

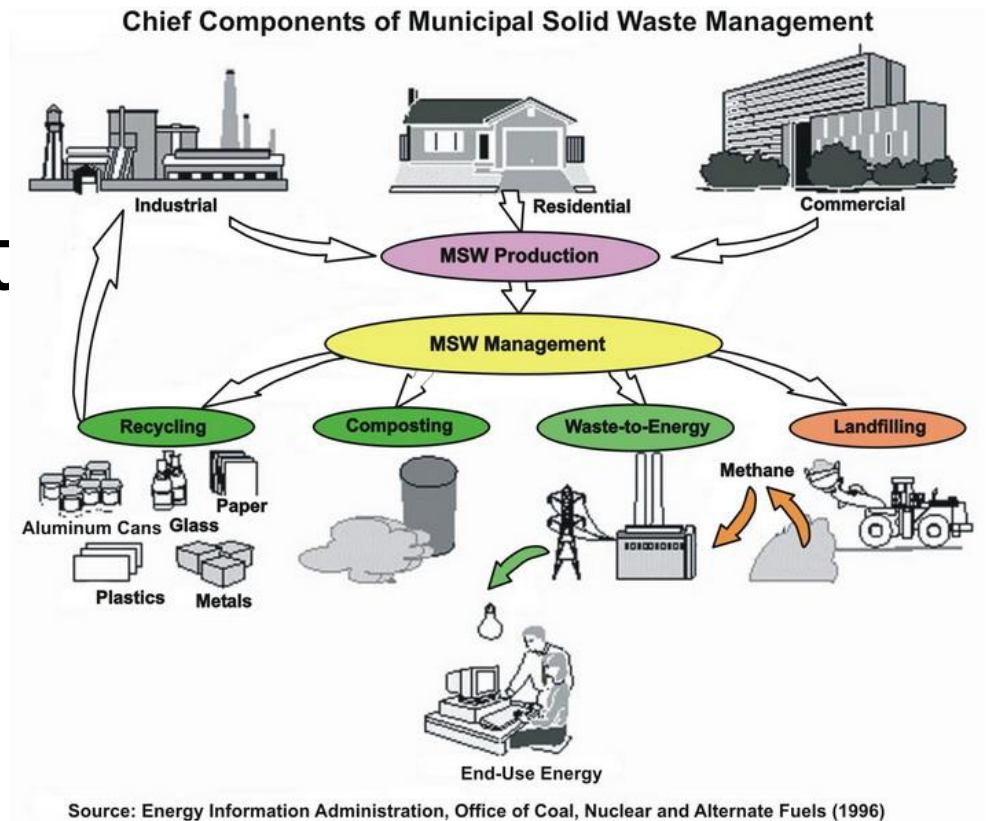
- Water supply, sewage and wastewater treatment and its reuse.
- Waste Management and Treatment and the coordination of the municipal services of collection.



INTRODUCTION: Legal Framework



What's the AMB MSW management model ?



MSW Management Model: Collection

a) 5 Publics containers,

- Paper and cardboard (blue)
- Organic matter (brown)
- Glass (green)
- Packaging (yellow): plastics, metals and brick
- Refuse (grey)

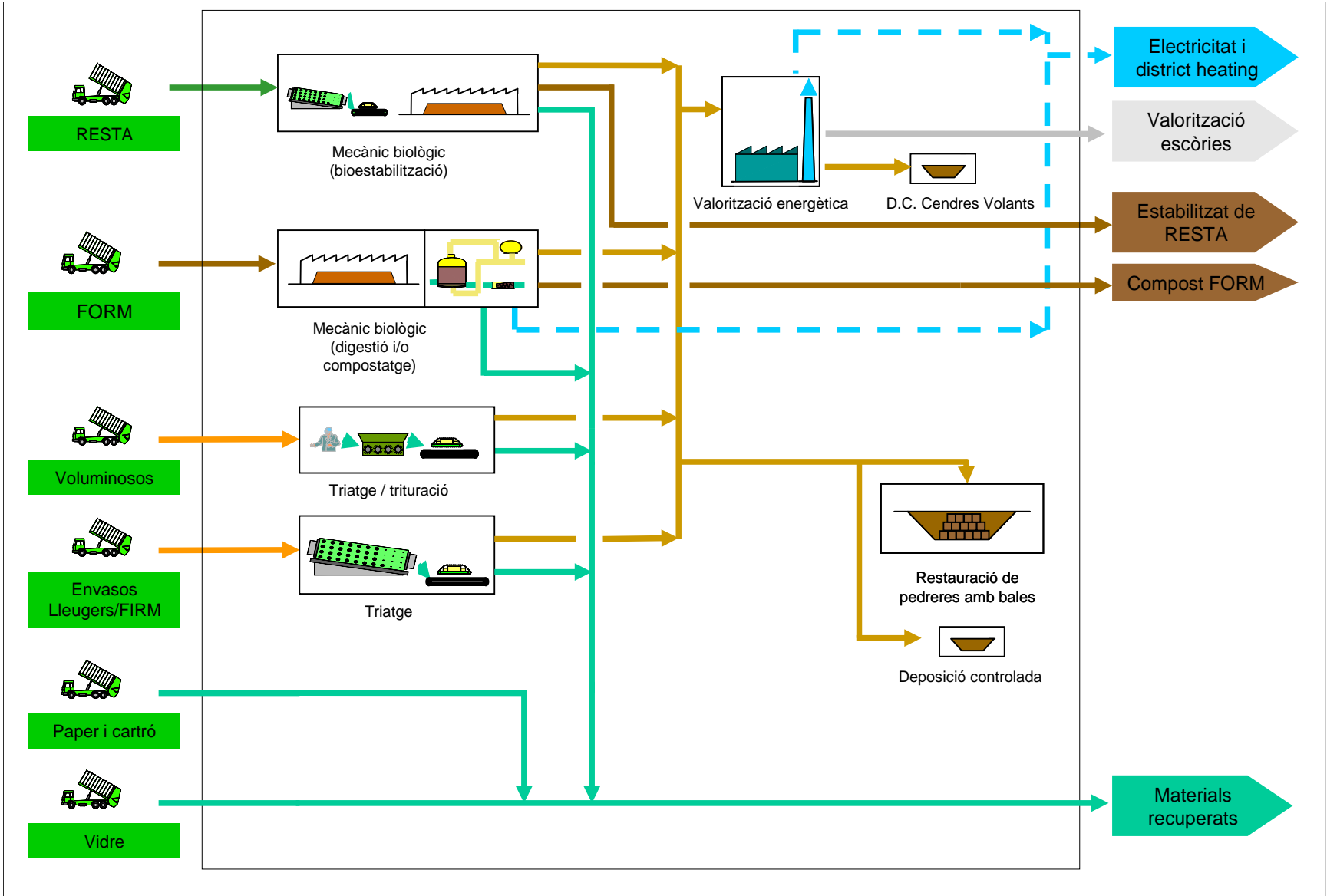


b) Green points (DEIXALLERIES, decheterie),

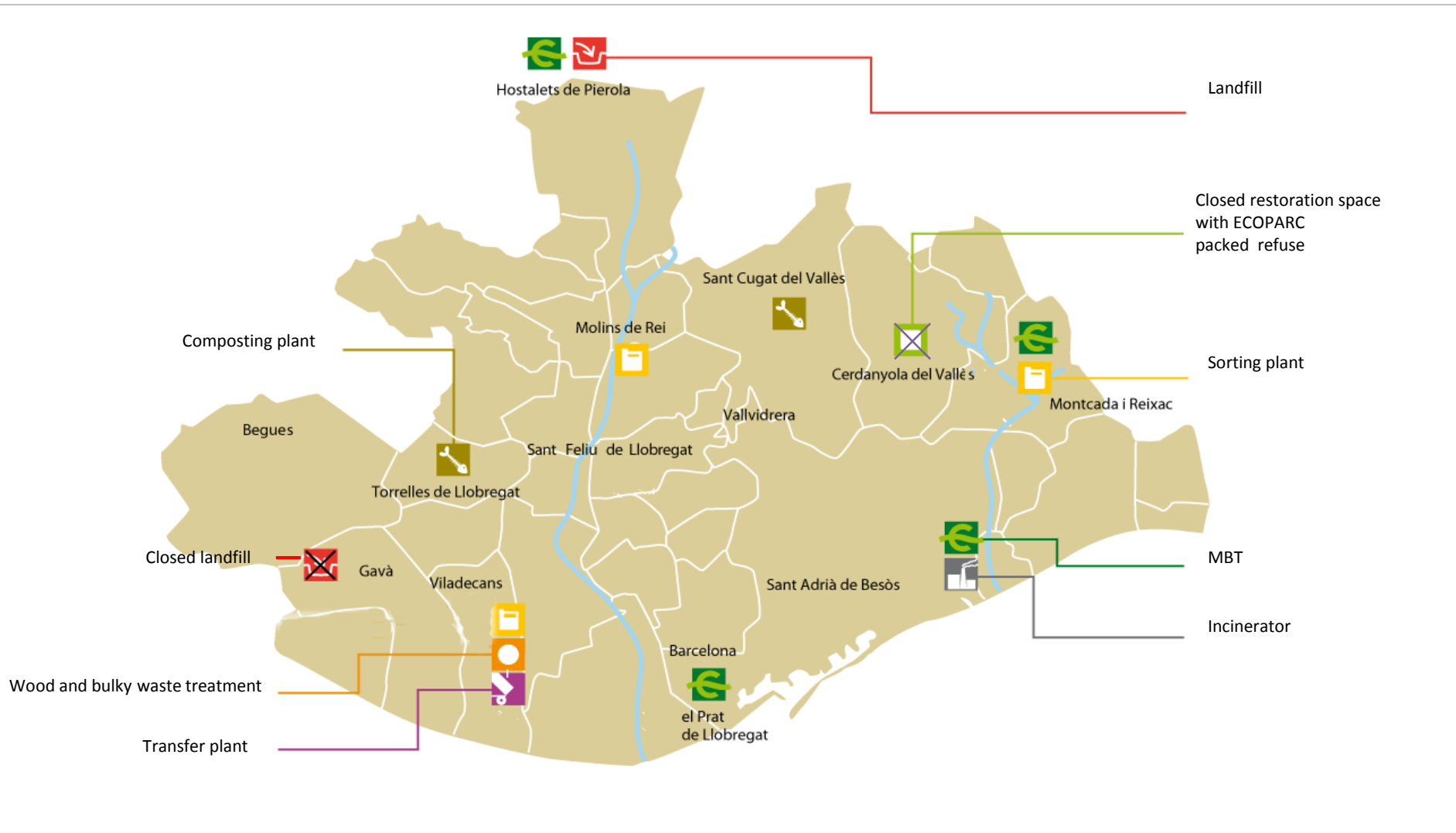
- Tires,
- Electric material (Bulbs, fluorescent tubes, batteries,..)
- Paints and varnishes
- Househols appliances
- Oils



MSW Management Model: Treatment

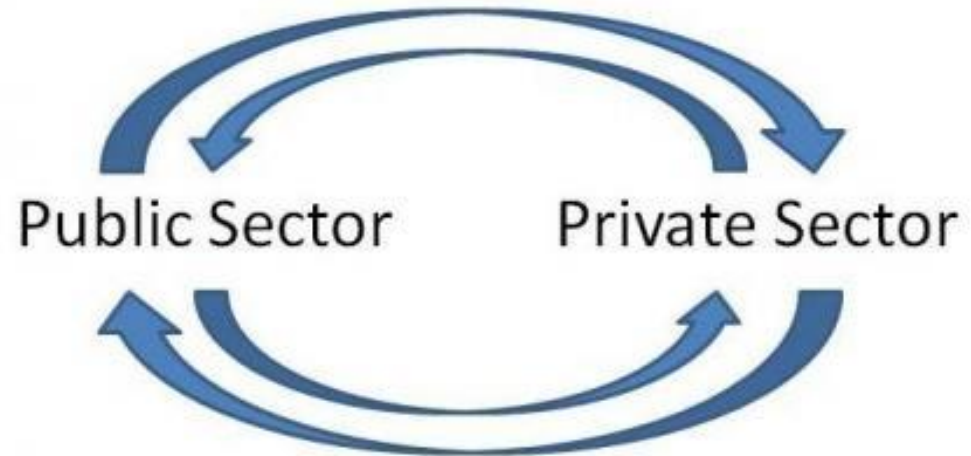


MSW Management Model





The role of the private sector

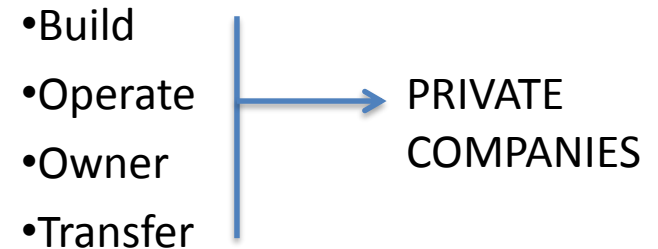


PRIVATE SECTOR IN THE MSW MANAGEMENT MODEL

The model is a public-private partnership (BOOT model):

Public tendering :

* It includes the project, financing, construction and operation for 20-30 years of the most significant installations.



Two payments are made to the private company :

- Operating fee (€/t)
- Investment payment (€/t or €/year)

	ECOPARC 1	ECOPARC 2	ECOPARC 3	ECOPARC 4
Capacity (tonnes/year)	160.000 (Refuse) + 85.000 (SSOM)	160.000 (Refuse) + 100.000 (SSOM)	192.000 (refuse) – TMB 350.000 - Incinerator	300.000 (refuse) 50.000 (SSOM)
Owner	AREA METROPOLITANA DE BARCELONA			
Public and Private Partnerships	URBASER (95%) TERSA (5%)	TIRSSA (54%) FCC (31%) URBASER (10%) TERSA (5%)	CESPA (48%) URBASER (32%) TERSA (20%)	CESPA (100%)
End of the exploitation contract	06/2030	11/2027	12/2022	10/2025
Pretreatment technology	Rotary sieves, optical separators, manual collection, aspiration of film, field magnet and eddy current separators	Rotary sieves, manual collection, aspiration of film, field magnet and eddy current separators	Rotary sieves, optical separators, manual collection, aspiration of film, field magnet and eddy current separators	Rotary sieves, optical separators, manual collection, aspiration of film, field magnet and eddy current separators
Composting Technology	WTT (WASTE TREATMENT TECHNOLOGIES)	ROS ROCA	-----	SORAIN CECCHINI
Biomethanation Technology	BTA	VALORGA	ROS ROCA	-----
Biomethanation Features	Wet Digestion	Dry Digestion	Wet Digestion	-----

TERSA Barcelona Municipality (58%), AMB (42%)

TIRSSA FCC (33%), URBASER (66%)

Extended producer responsibility



Integrated Waste Management Systems SIG

Integrated Management Systems are non-profit organization that allow producers to meet their obligations to the principle of "polluter pays"



SIG tasks

- 1- Establishment and management of systems for the collection,**
- 2- Transport,**
- 3- Recovery, treatment, recycling and or disposal of waste materials**
- 4- Monitoring of waste materials covered by their policy areas, including the supervision of such operations and landing sites after closure.**

PRODUCT

SIG

Packaging.....	ECOEMBES
Glass.....	ECOVIDREO
Batteries and Accumulators.....	ECOPILAS
Medicamentos	SIGRE
WEEE (RAES)	AMBILAMP (bulbs & ballast)
(Waste electrical	ECOLUM (Lighting devices)
and electronic equipment)	ECOTIC (Air Conditioning, omputer equipment and cellulartelephones).
	ECOLEC (Household appliances)
	ECOLUM (Lighting devices)
	ERP (household appliances, bulbs,..)
Pesticide Residues	SIGFITO,
Wate- tyres.....	SIGNUS,
Used Oil	SIGAUS,

The economic Sustainability of the model?



FINANCIAL SUSTAINABILITY

COLLECTION



It is carried out by every municipality.



The cost is paid by citizens though:

- Direct Charge
- Included in the Tax on assets and property (IBI).

TREATMENT



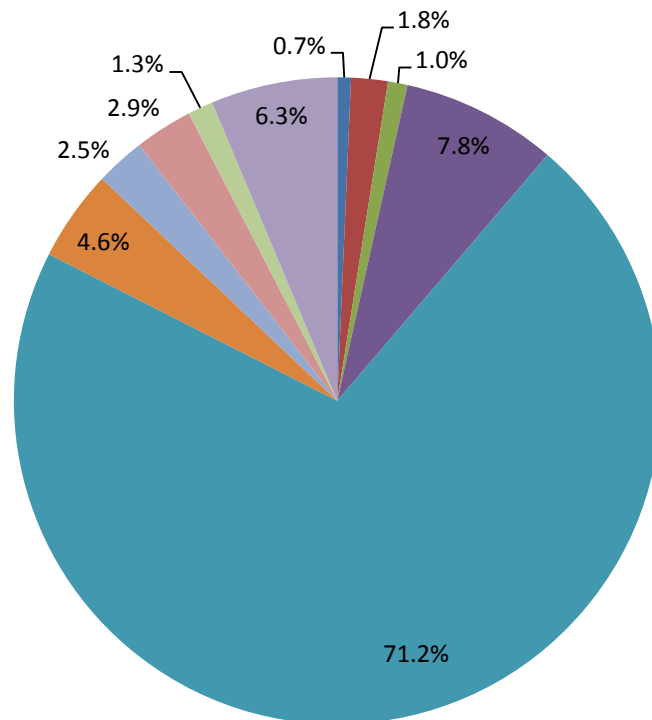
It is carried out by the AMB.



The cost is mainly paid by the citizens using charges (TMTR).

FINANCIAL SUSTAINABILITY

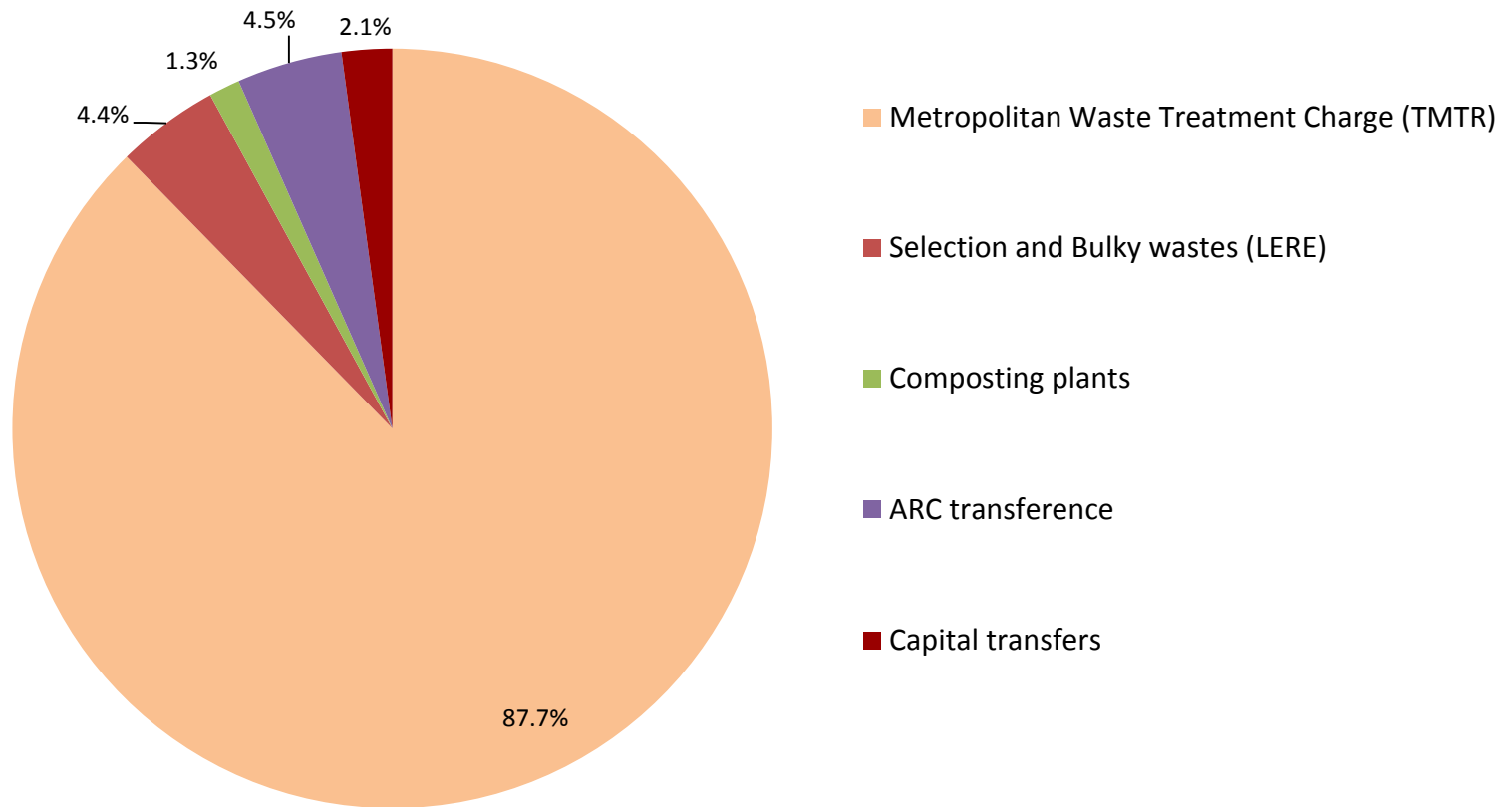
2014 Expenditures



- Waste prevention
- Deixalleries collection
- Composting plants
- Selection and bulky waste plants
- Mechanical-biological- Treatment plants (ECOPARCS)
- Waste Transport to the transfer point
- Landfilling of street-cleaning residues
- Maintenance of closed landfills
- Estructure cost
- Return of investment financing

FINANCIAL SUSTAINABILITY

2014 Incomings



FINANCIAL SUSTAINABILITY

T.M.T.R. (TAXA METROPOLITANA DE TRACTAMENT DE RESIDUS)

Calculated on the basis of the real waste management cost, and distributed in two main charging lines:

- **Households:**

The tax depends on the house properties. (Flowrate of water, Diametre of the incomeing flowmeter, and monthly consumption of water).

* This tax is multiplied by a municipal coefficient .

$$Cfm = (1 - n) + n \times \left(\frac{\frac{\sum_{2010}^{2012} T_{i,a}}{3 \times hab_{i,2011}}}{\frac{\sum_{2010}^{2012} T_{t,a}}{3 \times hab_{t,2011}}} \right)$$

* Some social bonuses are considered:

- Houses with more than 4 inhabitants -→ bonus 5%.
- Owner older than 60 -→ bonus 50%
- Owner in specific MSW progammes → until 25%
- Use of deixalleries → 25%

FINANCIAL SUSTAINABILITY

T.M.T.R. (TAXA METROPOLITANA DE TRACTAMENT DE RESIDUS)

- **Business and Stores:**

- * The tax depends on the type of waste generated.
 - A- unsorted waste
 - B- Unsorted waste and cardboard
 - C- Unsorted waste and paper
 - D- Unsorted waste, packages and/or glass
 - E- Organic, unsorted waste and cardboard
 - F- Organic, unsorted waste, packages and cardboard,
- * Some social bonuses are considered:
 - Tax exemption for the fractions treated by an authorised manager.
 - Social entities,... -→ bonus 50%
 - Owner in specific MSW programmes → until 25%
 -



www.aiguesdebarcelona.cat/oficinaenxarxa



900 710 710 TELÈFON D'ATENCIÓ AL CLIENT
(laborables 8 a 20h)

900 700 720 TELÈFON D'AVARIES (24h)

Data Lectura anterior	Lectura anterior	Data Lectura actual	Lectura actual	Consum període (m ³)	Base de facturació
01/04/15	1.526	02/06/15	1.544	18	Lectura Real

Ús domèstic
Comptador individual sobre bateria
Habitatge Tipus C

Comptador: IBE 00531860H
Posició: 0-07

RESUM FACTURA BIMESTRAL

SUBMINISTRAMENT D'AIGUA	30,94 €
CÀNON DE L'AIGUA	8,75 €
TAXA DE CLAVEGUERAM	2,75 €
TAXA DE TRACTAMENT DE RESIDUS	4,95 €
IVA	3,97 €

TOTAL A PAGAR **51,36 € (*)**

(*) Veure detall al dors.

AVÍS MISSATGE



L'aigua sempre està en moviment, recorre el seu cicle fins que arriba a nosaltres, a les nostres llars, a les nostres vides. Li oferim l'aigua de més qualitat, i l'acompanyem en el seu viatge, que segueixi el seu curs, perquè segueixi fluint.

LA SEVA DESPESA
DIÀRIA



How did we
solve the
NIMBY effect?



SOCIAL ASPECTS (NIMBY effect)

Financial compensation:

- A fixed amount per ton treated in the installation.
- A fixed annual amount.
- Reduction in the MSW treatment cost.

Thank you!

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