



**Agència de  
Residus de  
Catalunya**

# **MANAGEMENT OF PLASTIC WASTE. ACTIONS AND PLANNING OF THE WASTE AGENCY OF CATALONIA**



**Generalitat  
de Catalunya**

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- **Presentation of ARC**
- **Catalonia. Our context**
- **Main data**
- **Planning**
- **Actions**
- **Targets**
- **Conclusions**



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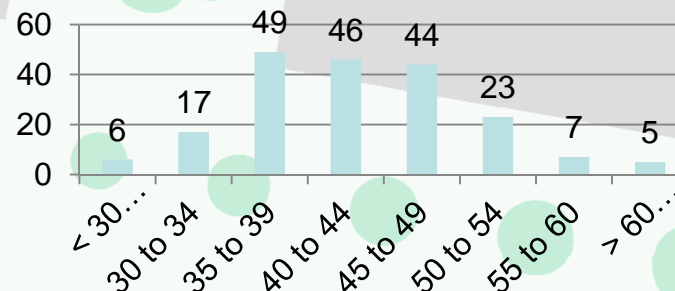
# Waste Agency of Catalonia

Agència de Residus de Catalunya (ARC)

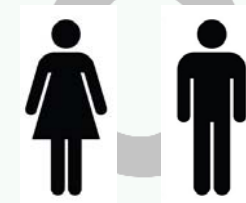
ARC is a public company within the Planning & Sustainability Department of the Government of Catalonia.



Distribution by age



Generalitat  
de Catalunya



134

63



ARC has own competences on waste generated in Catalonia and also on all waste which are managed within Catalonia

- **Competences**

- **Municipal waste**
- **Industrial waste**
- **Construction waste and debris**
- **Manure & Livestock (jointly with Agriculture Department)**
- **Sanitary waste and**
- **Soil recovery**



- **Structure [Waste Agency of Catalonia]**
  - **197 workers** ( 75 % Technicians)
  - **Areas of work:** planning, support and monitoring, inspection, environmental authorization, information (indicators and traceability)



# General Data about Catalonia



- Surface: 32,000 km<sup>2</sup>
- Population: 7,500,000 inhab.
- Municipalities: 946
- Regions: 41 counties
- GDP (21% ind. 1% agr. 5% constr., 73% serv.)
- GDP per inhabitant 27.236€





## GENERAL WASTE

- 2.9 Mt/y construction waste (40% val.)
- 3.6 Mt/y industrial waste (79% val.)
- 3.7 Mt/y municipal waste (39% val.)

## PLASTIC WASTE

- 100.000 t/y from industry (75% s.c.)
- 250.000 t/y from municipal waste (30% s.c)





- **4th generation of waste management plans**
  - Establishes the model for waste management
  - Industrial, construction, municipal waste
  - Producer responsibility
  - General register of waste management companies
  - Register of waste carriers
  - Waste separation at source
  - Separate collection
  - Prevention and valorization as de main option
  - Information and communication to stakeholders





# Waste planning targets in Catalonia 2013-2020

## PRECAT 2013-2020:

### General Programme on Prevention & Management of Waste & Resources

The general objective of this programme is to define the action strategy of the Government of Catalonia for prevention and waste management until 2020, advancing in generation and efficient use of resources and promoting a low-carbon and circular economy, improving competitiveness and business dynamics.







- **Understanding and controlling the flow of waste**
- **Having a network of waste management facilities to give us sufficiency and proximity for waste treatment**
- **Encourage prevention and recycling of waste**
- **Reducing the amounts of waste being landfilled**





- **Interacting with all stakeholders (companies, municipalities, citizens)**
- **Promoting legislation (transposition of directives, new regulations)**
- **Promoting fiscal measures (landfill tax)**
- **Investing in infrastructure and equipment (1.000M€ from 2000)**
- **Promoting research and development**
- **Studying and searching for technical innovations**





Thirty years  
Ago:



Today:

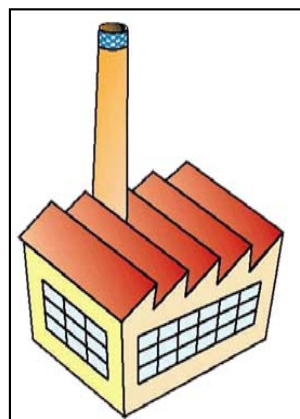
2016		
RESIDUS	Capacitat t/any	Gestors
MESCLES I ALTRES	5.786.776	240
ALIMENTARIS	347.916	15
BIDONS	654.302	23
CABLES	84.557	108
CARNIS	247.790	7
CDR	241.650	5
DEPURADORA	365.177	15
DISSOLVENTS	100.035	6
ESCÒRIES	700.440	13
FARINES	80.000	2
FEMS	118.094	10
FERRALLA	4.469.664	343
FRIGORÍFICS (Unitats)	125.000	1
FUSTA	935.523	176
MEDICAMENTS	1.000	1
METALLS	90.826	12
MUNICIPALS	173.313	3

2016		
RESIDUS	Capacitat t/any	Gestors
OLIS	94.600	3
PAPER I CARTRÓ	2.250.550	181
PELL	9.500	2
PINYOLADA	140.500	4
PLÀSTICS	455.427	208
PNEUMÀTICS	187.840	19
PURINS	554.151	9
R.ESPECIAL	1.482.420	27
R.ORGÀNICS	1.012.017	59
RAEE	117.646	64
RUNES	4.465.702	79
SANITARIS	14.190	3
SORRES FONERIA	9.800	2
TÈXTILS	54.155	54
TÒNERS	924	12
VFU	366.691	161
VIDRE	883.407	100

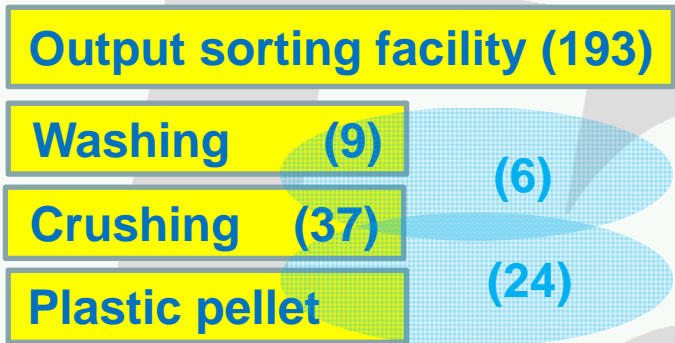
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# Industrial Plastic Waste Management ( 2015 data )



Waste Producer

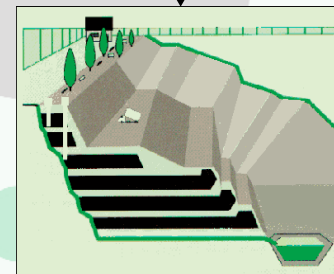


Tons 2015 Industry	Landfill	Recycling	TOTAL
Plastic packaging wastes	2.215	4.705	6.920
Plastic wastes	10.276	87.872	98.148
<b>TOTAL</b>	<b>12.491</b>	<b>92.577</b>	<b>105.068</b>



88%

12%

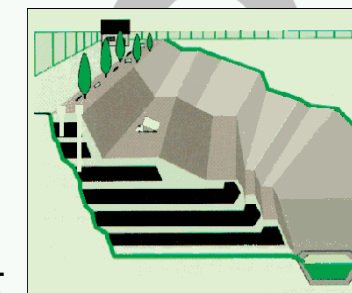
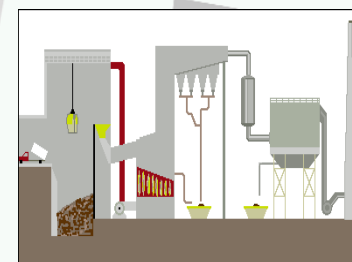
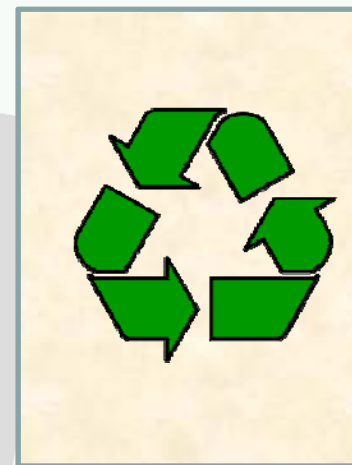
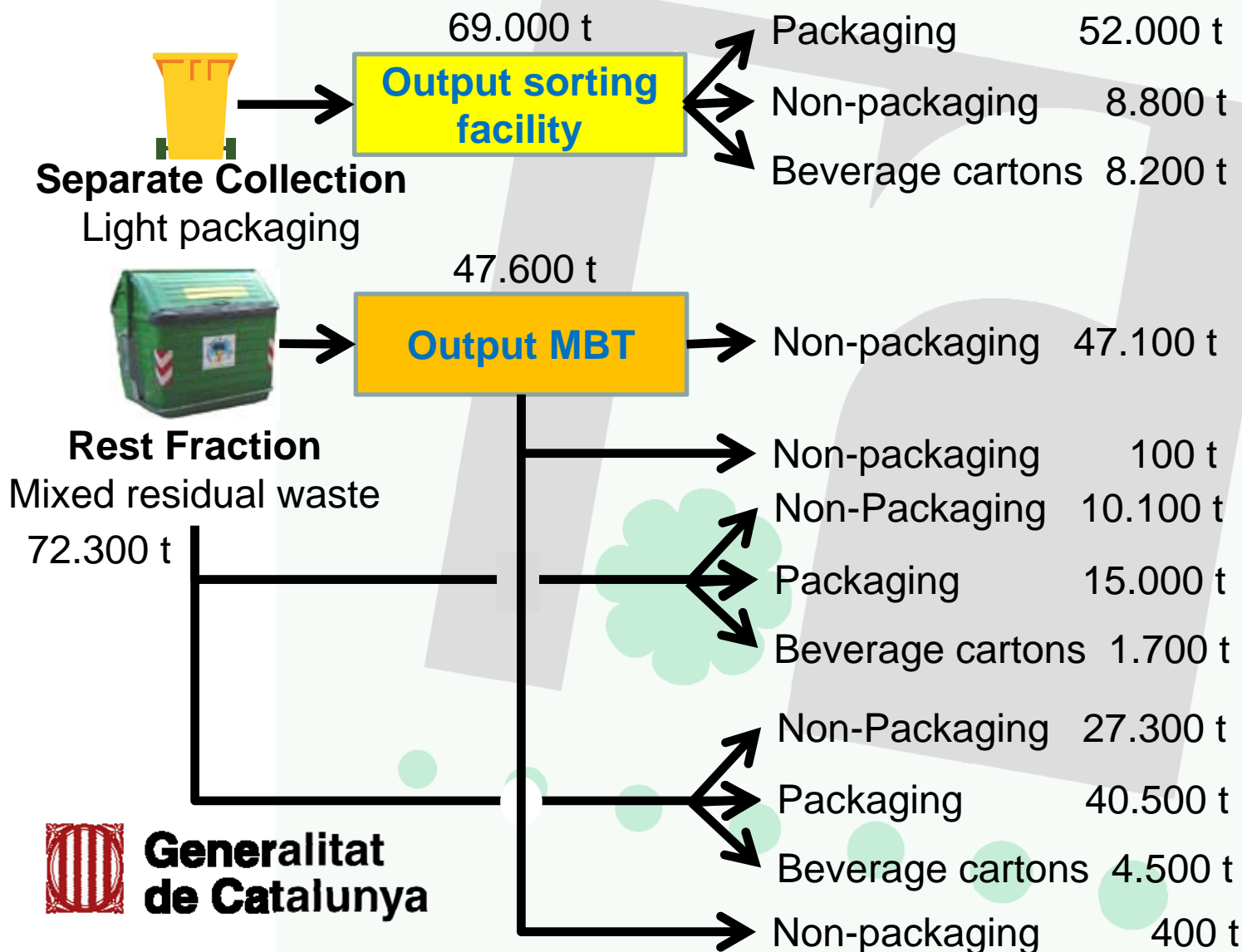


Symbol
1 PETE
2 HDPE
3 V
4 LDPE
5 PP
6 PS
7 OTHER





# Municipal Plastic Wastes Management ( 2015 data )





The Waste Agency of Catalonia (ARC) has contributed to the European Commission's "*Green Paper on a European Strategy on Plastic Waste in the Environment*" providing technical expertise on plastic waste

The main conclusions have been included in our Program, with special measures regarding each topic (prevention, management, legislation, market, awareness creation, ...)





## Measures included in PRECAT

- **Increase the cost of final treatment (landfill and incineration tax)**
- **Communicate and inform through all channels**
  - Users (social networks, media ...)
  - schools
- **Promote local prevention plans**
- **Give value to recycled material**
- **Promote exchange, reuse centers, ...**
- **Promote specific EPR schemes**
- **Improve commercial collection**
- **Improve access of citizens to waste management services**
- **Promote Pay-as-You-Throw schemes (PAYT)**
- **Ban plastic bags**





# PRECAT main targets

	Value 2012	Objective 2020
<b>PREVENTION</b>		
Waste reduction (from 2010)	-17,90%	-15%
<b>GENERAL OBJECTIVES</b>		
Separate collection of municipal waste	39%	60%
Recycling of municipal waste	32,20%	55%
Industrial waste recovery	78% (destination recovery)	70% (effective recovery)
Construction and demolition waste recovery	43%	75%
<b>FLUX OBJECTIVES</b>		
Reduction of single-use commercial plastic bags	-52,40%	-90%
Total recycling of organic waste	22,20%	60%
Total recycling of packaging waste / plastic	40,40%	75% / 50%
Battery separate collection	32,40%	55%
WEEE preparing for re-use	aprox. 0%	5%
Total recycling of plastic		70%
<b>CLIMATE CHANGE</b>		
Carbon footprint reduction	1,5 Mt CO2 eq/y	-30%
Efficiency of biogas capture in landfills	30%	60%

**ACT-009:**  
Assessment of the generation of materials (plastic, metals, paper-cartridges) of domestic and commercial packaging

**ACT-059:**  
Reduction of non-reusable packaging.

**ACT-065:**

- A grant with the aim of promoting the consumption of recovered materials and products.
- Finding new markets for plastics
- Promoting the use of recycled plastic in the food sector

**ACT-093:**  
Recovery of plastics for agricultural use.

**ACT-098:**  
Promoting the collection and recycling of plastic materials with a **currently low recovery rate**.

**ACT-130:**  
Improving waste management in the ports of Catalonia (Marine Litter).







- **PLASTICS**

- are cheap
- are versatile
- are omnipresent

- **BUT**

- Plastics are not just one material but a mix of material streams
- their characteristics are oriented in the product-life requirements rather than in the post consumer phase
- Once the product becomes waste, the different material groups usually are not separated
- Plastics components last longer than other product parts
- The technical separation is complex and never complete
- All this hampers recycling
- Plastics are discharged into the environment in an uncontrolled manner





- **THUS**
  - More pressure should be exerted on the producers of plastics and plastic goods
  - This has to be the starting point of any production
- **HOW?**
  - Eco-design facilitating recycling
  - Restricting certain types of plastic to certain types of products
  - Transmitting information to consumers





- **No products should enter the market if their recycling is not assured**
- **This means to influence the market, which can only be achieved on the EU level.**
- **We must cooperate among**
  - Those who put products on the market (designers, manufacturers, distributors ...)
  - Those who use them (companies, service, consumers)
  - Those who treat waste (treatment and recovery facilities)
  - And the administration (from Europe to Member States, regions and municipalities)





1. The currently most feasible strategies for plastic reuse and recovery consist in separation at source followed by the separate collection is the most important way to obtain enough quality material to ensure a sustainable recovery. On the other hand, the mechanical treatment of mixed waste (of both domestic and industrial origin) allows obtaining material of lower quality with lower economic value.
2. On the other hand, we must make efforts in research and innovation in the field of more efficient plastics recovery processes that provide a better separation of mixed fractions.
3. Last but not least, we need to implement a mechanism that ensures that products put on the market, and in this case especially plastics, are designed and manufactured in a way that facilitates recovery. In this case the European Union is the keyplayer.





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Thank you for your attention

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