CIRCULAR ECONOMY

saving resources, creating jobs

Green Week, Brussels > 3-5 June 2014

How to make PET beverage plastic bottles more sustainable in industrialized and in emerging countries?

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About EFBW:

Who we are

Not-for-profit association representing the European bottled water industry
Offices based in Brussels, Belgium (staff of three)

Members EFBW

National trade associations, bottling companies and suppliers

Memberships

ICBWA (International Council of Bottled Waters Associations)
Food Drink Europe

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EFBW Members

Countries represented

Austria
Belgium
Bulgaria
Croatia
Czech Republic
Denmark
France
FYROM
Georgia
Germany
Greece
Hungary
Italy
Luxembourg
Netherlands
Poland
Portugal
Romania
Serbia
Slovenia
South Africa
Spain
Turkey (2)
UK (2)
Ukraine

Companies

Danone Waters
Gerolsteiner
Karlovarske Mineralni Vody
Nestle Waters
Spadel

Others

Lab Oliver Rodes
NSF
Watercoolers Europe (WE)

Over 650 bottlers represented

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1. Europe

- Collection / sorting / recycling
- Lightweight / Ecodesign

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31 national shared responsibility schemes engaged in the selective collection and recycling of packaging waste.

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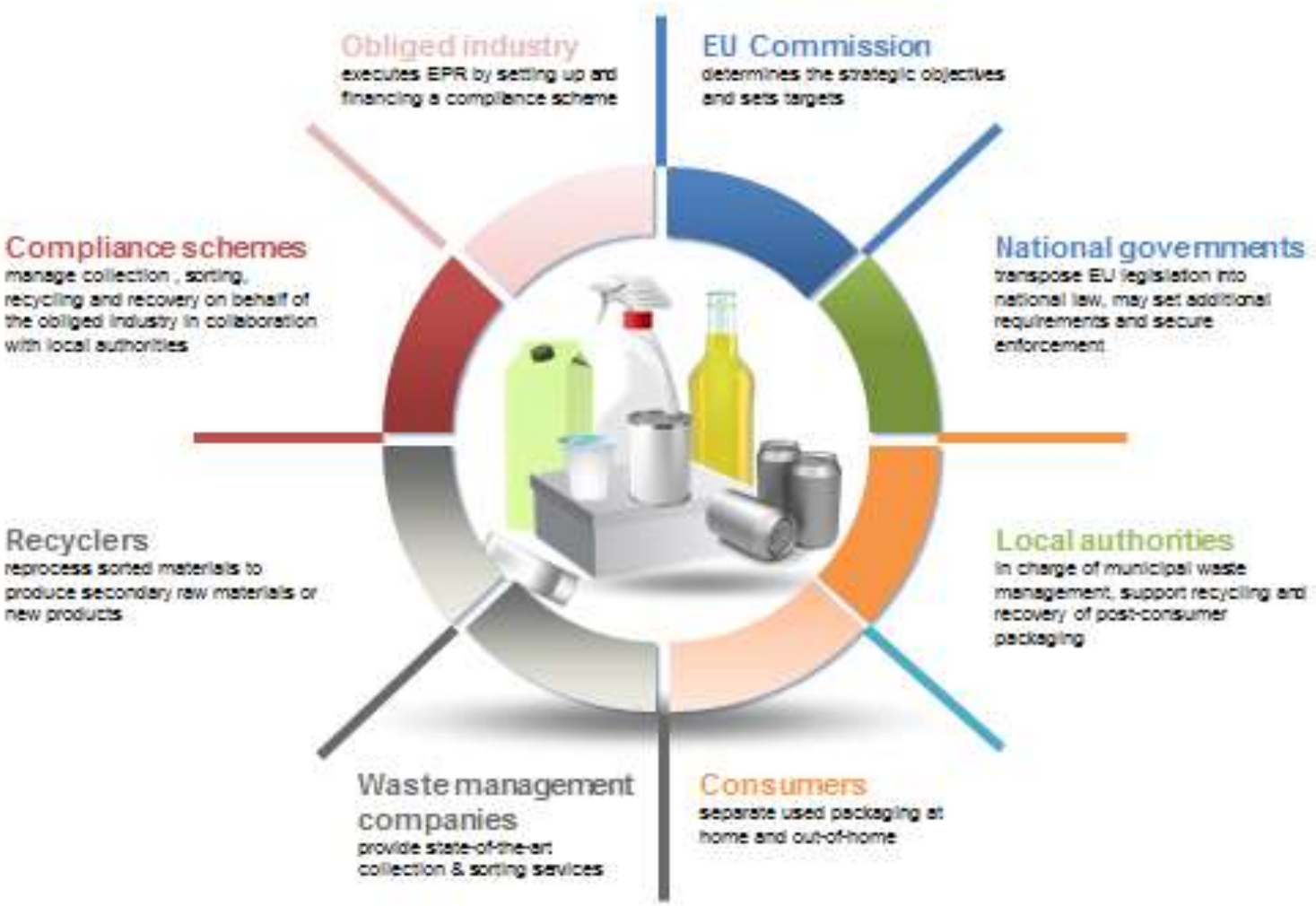
Specific role played by stakeholders



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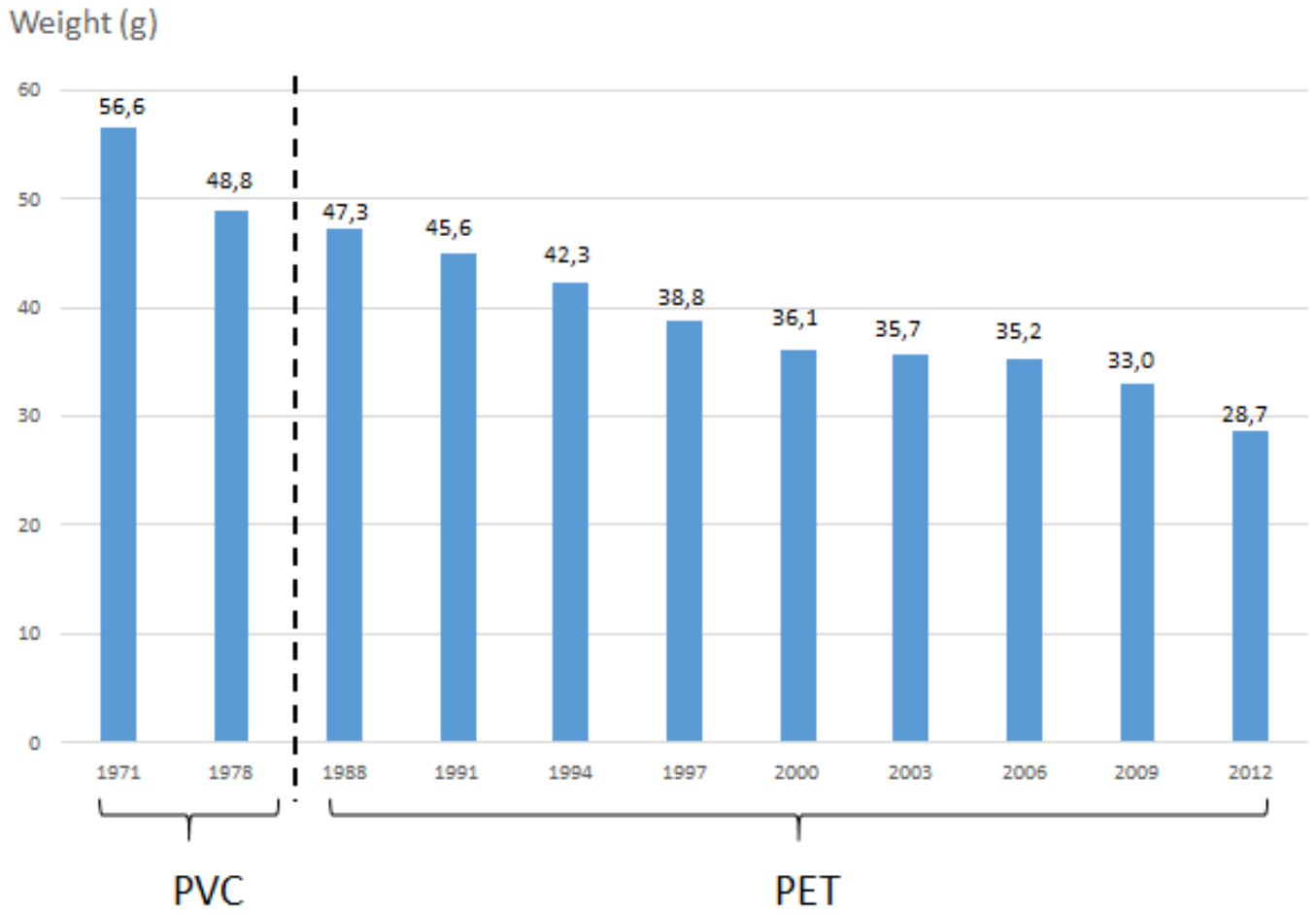
1,5 litre PET bottle weight evolution (still water)



Source: ADEME/Adelphe/
Eco Emballages/CNE

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European PET Bottle Platform

www.petbottleplatform.eu

- **Main objective :**
  - Evaluate PET bottle manufacturing technologies and products
  - Allow new PET bottle innovations, while minimizing the economic and environmental consequences for the European PET recycling industry.


Size & shape
Weight
Resin grade
Colorants
Barrier technologies
Additives
Caps & closures
Liners, seals & valves
Labels & sleeves
Adhesives
Inks
Other components


YES
NO
MAYBE
DON'T KNOW

EPBP

- Is a **voluntary** initiative
- Created in **2007**
- Grouping **technical experts** in the field of PET production, design, use, collection and recycling
- To provide an **objective evaluation** of the impact of new technologies on PET recycling processes across Europe.
- **Supported by** the European Association of Plastic Recycling and Recovery Organisations (EPRO), the Plastics Recyclers Europe (PRE), PETCORE-Europe, the European Federation of Bottled Waters (EFBW) and the European non-alcoholic beverages association (UNESDA).

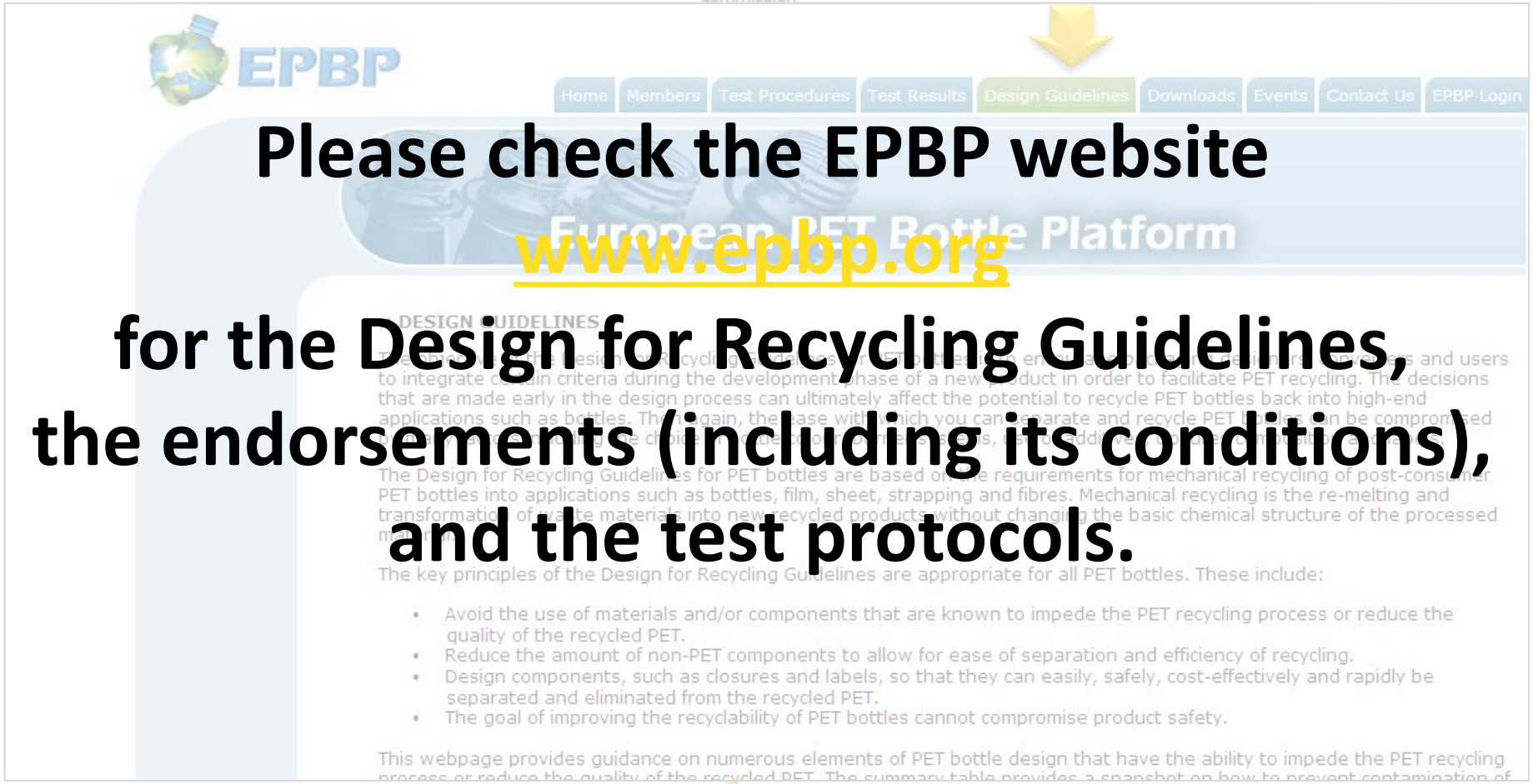
EPBP

- EPBP has established several **test procedures** in order to assess the recycling profile of new PET bottles, including barriers, additives, closures, labels, etc.
- The first set of test procedures are relatively rapid and low-cost techniques for the **quick assessment** of the recycling profile of PET bottles, including oven test, optical sorting test, glue separation, etc.
- In addition, the Platform establishes specific test procedures using **up-to-date testing methods** that produce qualitative and/or quantitative test results.
- For more information, visit www.petbottleplatform.eu.

EPBP

- EPBP has assessed **the impact of several innovations** on the PET recycling stream. These assessments are based upon tests carried out according to the EPBP testing protocol.
- Applicants must demonstrate that materials and/or components used in PET bottles can be **recycled safely and economically** with an environmental benefit, using existing recycling technologies and processes, by eliminating or significantly reducing materials that may impede recycling without affecting the yield or the quality of the recycled PET.
- To date EPBP has considered **more than 20 applications**. Many are ongoing, but there are 9 so far on the positive list.

- EPBP focuses on some **key principles of the Design for Recycling Guidelines** that are appropriate for all PET bottles. These include:
  - Avoid the use of materials and/or components that are known to impede the PET recycling process or reduce the quality of the recycled PET.
  - Reduce the amount of non-PET components to allow for ease of separation and efficiency of recycling.
  - Design components, such as closures and labels, so that they can easily, safely, cost-effectively and rapidly be separated and eliminated from the recycled PET.
  - The goal of improving the recyclability of PET bottles cannot compromise product safety.



Please check the EPBP website

www.epbp.org

for the Design for Recycling Guidelines, the endorsements (including its conditions), and the test protocols.

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POLYMARK Project

- Polymark aims to develop a technology to identify and separate food contact plastic material from non-food contact plastic (by using UV markers and a spectrometer detection system)
- Goal: increase recycling and re-use + reduce environmental impact of plastics
- 36 months
- Budget: € 1.47 million

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Consumers

PETE

ColorMatrix

petcore

EFBW

Fraunhofer IPMS

FP7 POLYMARK

1478 000 EUR funding

epro

25 MT

Mixed Plastics

SIS

UK Health and Environment Research Institute

Subcontractors / RTD

4PET RECYCLING BV

closed loop recycling

PLASTICS RECYCLERS EUROPE

3 Recovery & collection

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2. Emerging countries

DANONE waters

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Mexico Municipal solid waste management

- ✓ 102 K tons municipal solid waste daily
- ✓ 260 landfills

- 61% “landfills”
- 8.5% controlled fields
- 26% unregulated
- 4.5% recovery recyclables

Source: SEMARNAT2012/PASA /Mundo Sustentable

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“Pepenadores” = waste pickers

- ✓ **Responsible for 90% of Mexican recycling !**
- ✓ **Very low efficiency due to very hard conditions**
- ✓ **Social exploitation & poor life conditions (220USD / month average)**

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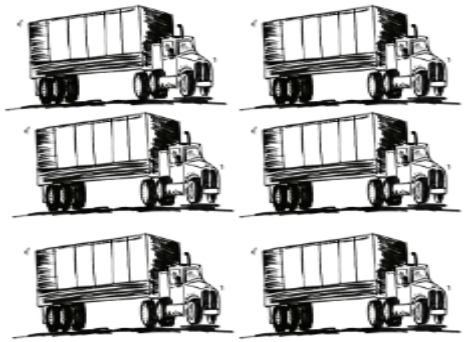
BEFORE

Project idea: improving recycling flow



35km

Recollection firm

Landfill

Repengadores

Intermediate Buyer

Final Buyer

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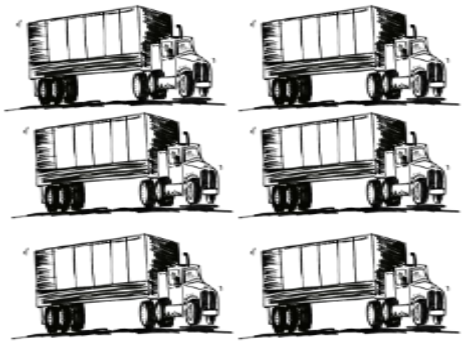
TODAY

Project idea: improving recycling flow



Recollection firm

5km

DANONE ÉCOSYSTEME + BONAFONT

Segregation Plant

Final Buyer

Landfill

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Recycling

BONAFONT
EL AGUA LIGERA

Mundo Sustentable

ASHOKA

PROMOTORA AMBIENTAL

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Nigeria

- Nestlé is actively engaged in a PET Recycling initiative in association with key stakeholders in the PET Industry (Coca-cola, Nigeria Breweries, PEPSI Co., Nigeria Bottling Company, etc.).

- Nestlé has invested alongside these stakeholders in a partnership with ALKEM (a recycling multinational) towards increasing PET collection centers around the country. These bottles are later recycled into useful household materials. Focus is to engage more workforce in the collection of improperly disposed bottles off our environment and transfer to ALKEM.

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China

Nestle Waters China Broke Guinness World Record on World Water Day in 2011!

- The Chinese market recycled the largest number of plastic bottles in 8 hours on 21 March 2011

- Nestlé Waters employees (Shanghai's factory) and school children from 120 local primary schools

- 8.8 tonnes collected (around 402, 000 bottles)

- Nestlé Waters China donated all proceeds to the Shangai Charity Foundation.

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Chile

- Nestlé is helping to reduce waste and boost responsible disposal in Chile by supporting a new recycling network.
- The company has backed the 'Collective Recycling Project', which aims to recycle about 1,200 tonnes of waste per year through the installation of five recycling centres in the capital of Santiago.
- Nestlé signed a partnership with Walmart Chile, Coca-Cola Chile, PepsiCo, and Unilever, in a joint collaboration to improve waste management in the country.
- **Reducing waste**
- The new sites, managed by Triciclos, an organisation specialised in recycling and sustainable consumption, are providing consumers with an easy and efficient way to recycle their household waste.
- Each centre can recycle about 20 different types of materials such as glass, PET plastic, aluminium, paper, cardboard and clothes - avoiding further waste to landfill.

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Benefits of the project

- Political
  - Influence government to design good waste management legislation and phase out open dumps
- Social
  - Waste pickers: better work, better pay
- Environment
  - Improved impact due to transport reduction
  - Increase material recycling

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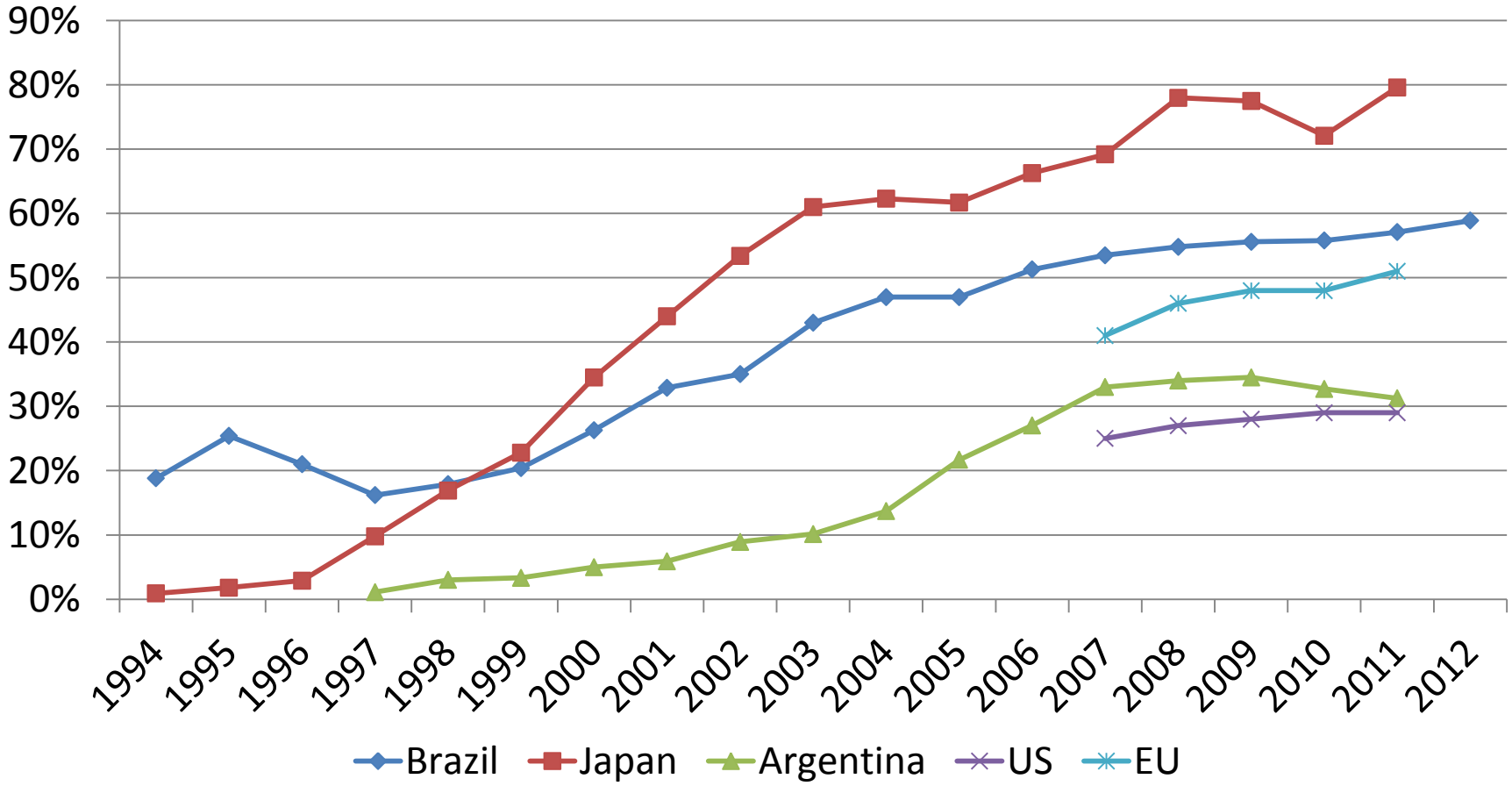
PET recycling rates



Sources : ABIPET, NAPCOR, ARPET, PETCORE.

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Thank You !

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