




Comparative study on fees: the packaging waste case



PoVeRE

Green policy for packaging waste



1st International EIMPack Congress 2012
***Recycling of Packaging Waste: Considering
all the Costs and all the Benefits***
Portugal - Lisbon - 29, 30 November 2012





PoVeRE

- **Project Team:**

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- **Financing:**

Sociedade Ponto Verde 

- **Duration:**

24 months (start date: May 2012)



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- **Objective**

The main objective of PoVeRE is to develop an intelligent software tool, for calculating an alternative urban waste packaging fee, which takes in consideration economical, social (e.g. public awareness) and environmental (e.g. raw material reduction) aspects.

The aim is to contribute to an improved sustainable waste management policy and also to promote innovation in packaging design and production with the consequent waste reduction.

The first step of this project was to study how Green Dot Fee is calculated in Portugal and other countries.

These are the results presented here:

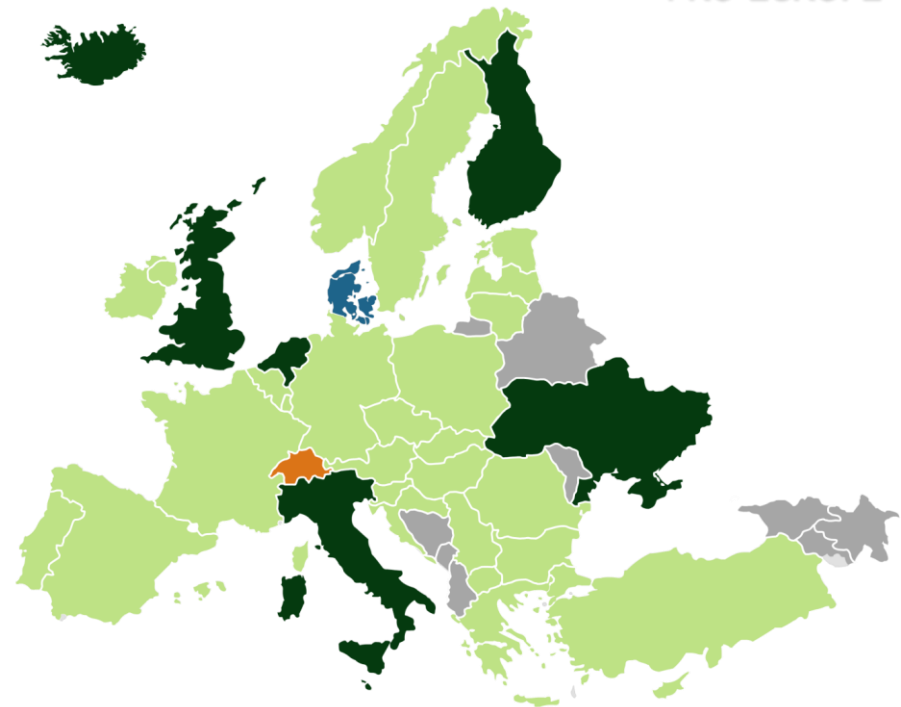


Comparative study on fees in extended producer responsibility systems: the packaging waste case

Comparative study on fees: The packaging waste case

- The most known PRO (Producer Responsibilities Organizations) for packaging waste management is the **Green Dot system**.
- It is applied in **35 countries**.
- They are registered with **PRO Europe** (Packaging Recovery Organization Europe), which is the general licensor of the Green Dot trademark.

Packaging Recovery Organization Europe
PRO EUROPE



- Countries that participate in the Green Dot program
- Countries with PRO EUROPE member packaging recovery organizations, but no use of the Green Dot as financing symbol
- Country with packaging recovery organization but no PRO EUROPE member
- Country with no producer responsibility

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Comparative study on fees: The packaging waste case

Europe

The aim of this work is to review how EPR fee could be defined and applied to packaging waste management, focusing on the Green Dot system applied in **33 European countries** where packaging waste PRO are PRO Europe members (EU-27 less Denmark plus Croatia, Iceland, Macedonia, Norway, Serbia, Turkey, and Ukraine).

PRO Europe has been the main source of information and data to conduct this work.



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Producer fee schemes for packaging have been identified in **24** Member State (UK uses tradable credits for packaging).

Denmark, Hungary and Netherlands use taxation systems and deposit-refund systems, i.e. not 'pure' producer responsibility systems.

The Netherlands, Italy and Ukraine are a member of PRO Europe but don't participate in the Green Dot program.

Overview of main type of producer responsibility schemes for packaging in the EU-27

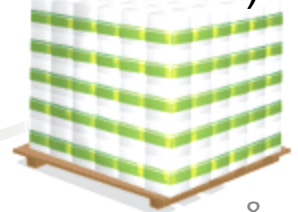
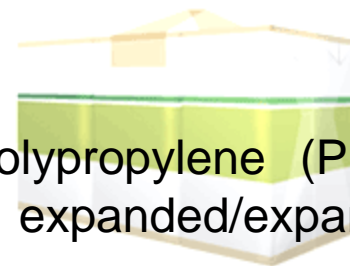
Member State	Main type of scheme	Member State	Main type of scheme
AT	Producer fee scheme (some deposit-refund schemes)	LV	Producer fee scheme
BE	Producer fee scheme (some deposit-refund schemes)	LT	Producer fee scheme
BG	Producer fee scheme	LU	Producer fee scheme
CY	Producer fee scheme	MT	Producer fee scheme
CZ	Producer fee scheme	NL	Tax (some deposit-refund schemes)
DK	Tax and deposit-refund schemes	PL	Producer fee scheme
EE	Producer fee scheme / deposit-refund schemes	PT	Producer fee scheme
FI	Producer fee scheme / deposit-refund schemes	RO	Producer fee scheme
FR	Producer fee scheme	SE	Producer fee scheme / deposit-refund schemes
DE	Producer fee scheme / deposit-refund schemes	SK	Producer fee scheme
GR	Producer fee scheme	SI	Producer fee scheme
HU	Tax	ES	Producer fee scheme
IE	Producer fee scheme	UK	Producer fee scheme (tradable credits)
IT	Producer fee scheme		

From: Use of Economic Instruments and Waste Management Performances, 2012

Comparative study on fees:

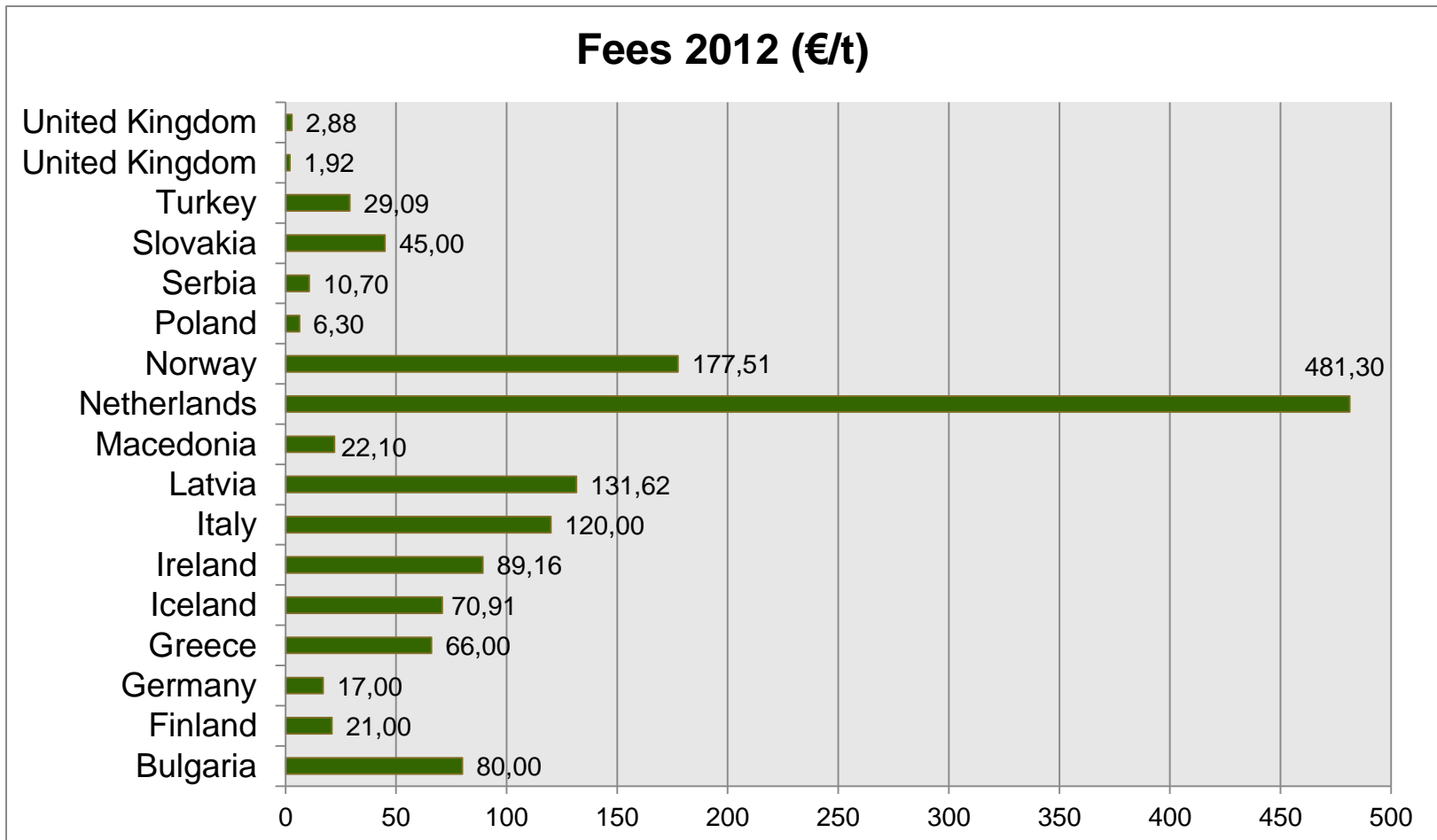
The packaging waste case

- Green Dot fees are paid by the packaging producers.
- Fees vary from country to country and depend on the type of material (e.g. paper, plastic or metal).
- Fees for packaging in EPR systems are related to weight and material – encouraging light weighting and material selection.
- Fees are applied according to packaging features, such as:
 - **Function** (primary, secondary or tertiary),
 - **Weight,**
 - **Volume,**
 - **Color,**
 - **Type of material** (polyethylene (PE), polypropylene (PP), polyvinyl chloride (PVC), polystyrene (rigid PS and expanded/expandable EPS) and polyethylene terephthalate (PET)),
 - **Destination** (household/domestic, commercial or industrial).



Comparative study on fees: The packaging waste case - Plastic

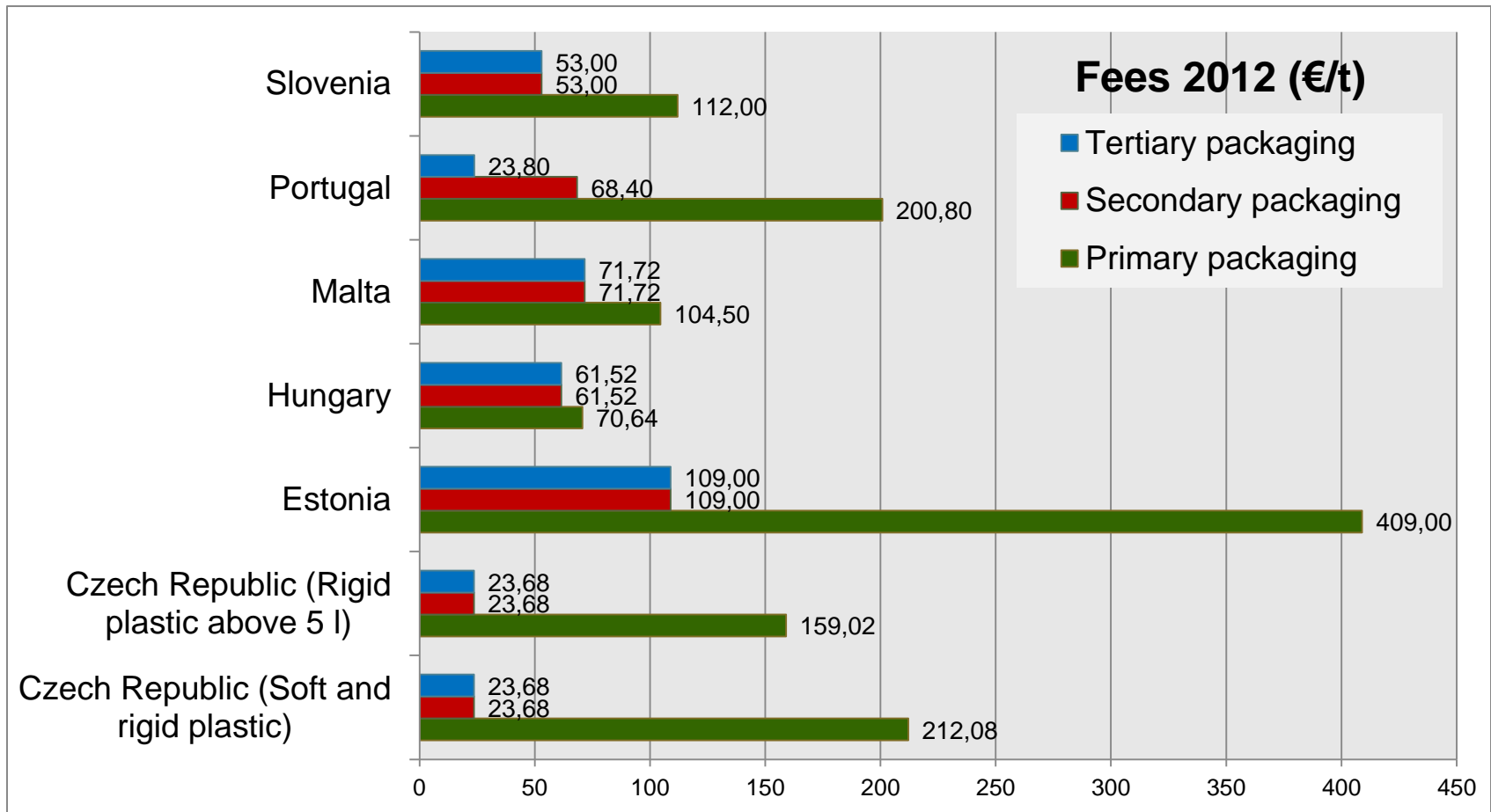
- The 16 countries presented in Figure 1 exclusively use weight on their fee.



Comparative study on fees:

The packaging waste case - Plastic

- Countries that have differentiated fee prices for primary, secondary and tertiary packaging - higher fee for **primary packaging**.



Comparative study on fees:

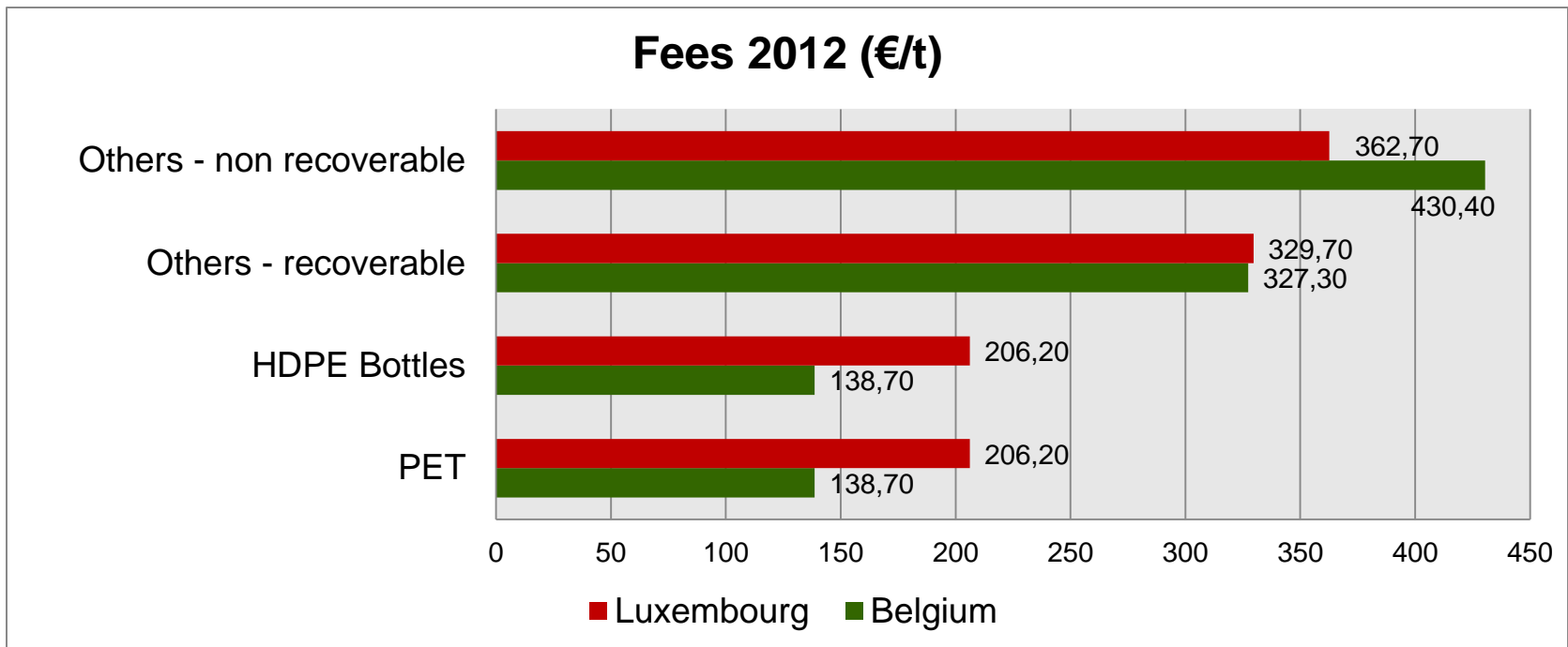
The packaging waste case - Plastic

Table 1. Different fees for plastic packaging depending on polymer type and color, 2012.

Country	Fees (€/t)				
	PET	HDPE bottles/ containers	Other plastics	Expanded plastic (EPS and other types)	Bio- plastics
Belgium	138.70	138.70			
Croatia	54.51		99.72		
Cyprus	105.89	105.89			
France	Clear PET – 24.22		28.06		
	Other PET bottles (green, red and others) – 24.47				
Lithuania	7.53	2.55	27.51		
Luxembourg	206.20	206.20			
Netherlands					81.40
Norway				289.27	
Romania	33.35		14.59		
Slovenia	71.00				
Spain	377.00	377.00			
		Flexible HDPE, LDPE, others – 472.00			
Ukraine	81.00		81.00		

Comparative study on fees: The packaging waste case - Plastic

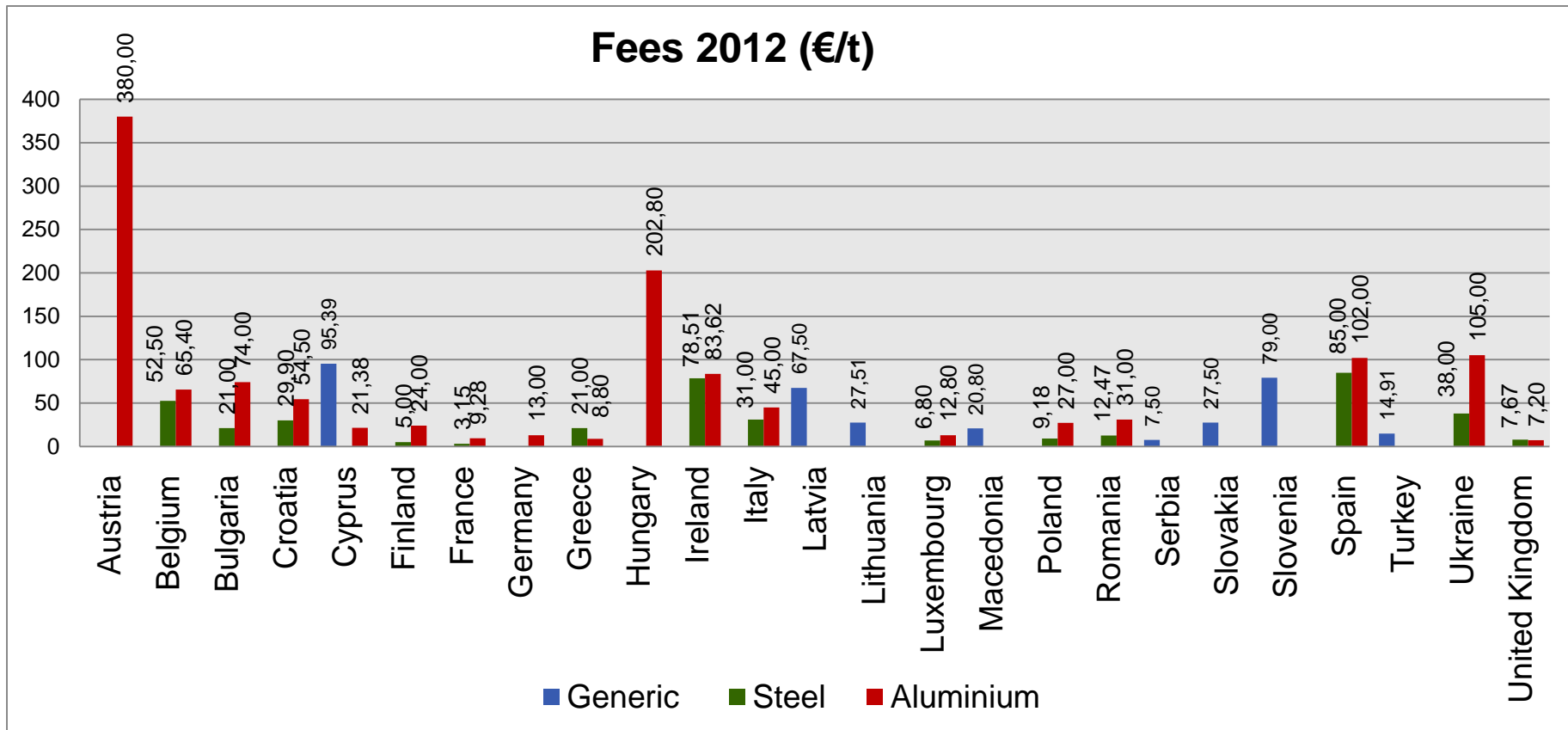
- Belgium differentiates PET and HDPE bottles and containers from other recoverable and other non-recoverable packages, being the first less expensive than the rest. Luxembourg also proceeds the same way.



Comparative study on fees:

The packaging waste case - Metal

- Most countries subdivide the metal in steel and aluminium, as shown in figure.



Comparative study on fees:

The packaging waste case - Metal

- Czech Republic, Estonia, Malta, Portugal and Sweden differentiate the fee considering the function and the utilization of packaging, as shown in Table 2.

Table 2. Fees paid to producer fee schemes for metal packaging, 2012.

Country	Fees (€/t)							
	Sales or primary packaging		Group or secondary packaging		Transport or tertiary packaging		Industrial/ commercial packaging	
	Steel	Aluminium	Steel	Aluminium	Steel	Aluminium	Steel	Aluminium
Czech Republic	65.16	86.78	19.89	19.89	19.89	19.89	19.89	19.89
Estonia	255.00	255.00	128.00	128.00	128.00	128.00		
Malta	133.00	61.75	64.60	28.50	64.60	28.50		
Portugal	84.50	144.70	30.90	114.40	24.40	49.40	24.40	49.40
Sweden	315.76	262.56					105.25	87.14

Comparative study on fees:

The packaging waste case - Metal

- The Czech Republic also applies a fee for metal above 5 l of primary packaging of 28.99 €/t.
- Sweden includes a fee to steel band and wire (47.53 €/t), metal drums (6.79 €/t) and to service aluminum packaging (245.59 €/t).
- Norway considers different fees for packaging configurations: metal type and volume, specific packaging items (lids and crown cork), hazardous content and volume. Volume is more penalized than other metal packaging.

Al trays 0 - 500 ml	Al trays 0 - 500 ml	V 0 - 250 ml can/tin	V 251 - 500 ml can/tin	V over 500 ml can/tin	Tubes	Table serving item	Lids	Crown cork	Hazardous contents 0 - 1.0 l	Hazardous contents 1.0 - 9.9 l	Hazardous contents 10 l	Hazardous contents > 10 l
4.87	11.18	4.47	10.12	17.09	4.87	1.31	0.92	0.26	22.35	56.54	123.60	262.98



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We did the same exercise for the following materials:

- Glass
- Paper and Cardboard
- Wood
- Others (beverage cartons, textiles, composites)

And



Comparative study on fees:

The packaging waste case

Conclusion

- Plastic packaging has been subjected to differentiated fees, either with features like weight isolated or weight combined with function, volume, polymer, color and destination.
- Glass packaging is the one with fewer differentiated fees, since its application is mostly as primary packaging.
- European differentiated fees are far from addressing sustainable packaging.
- Besides economic and technical aspects, environmental and social aspects should be included, to ensure this economic instrument complies with its purpose (besides supporting the packaging waste management system).
- New techniques and procedures should be developed that could analyze the real effect from fees into packaging design.

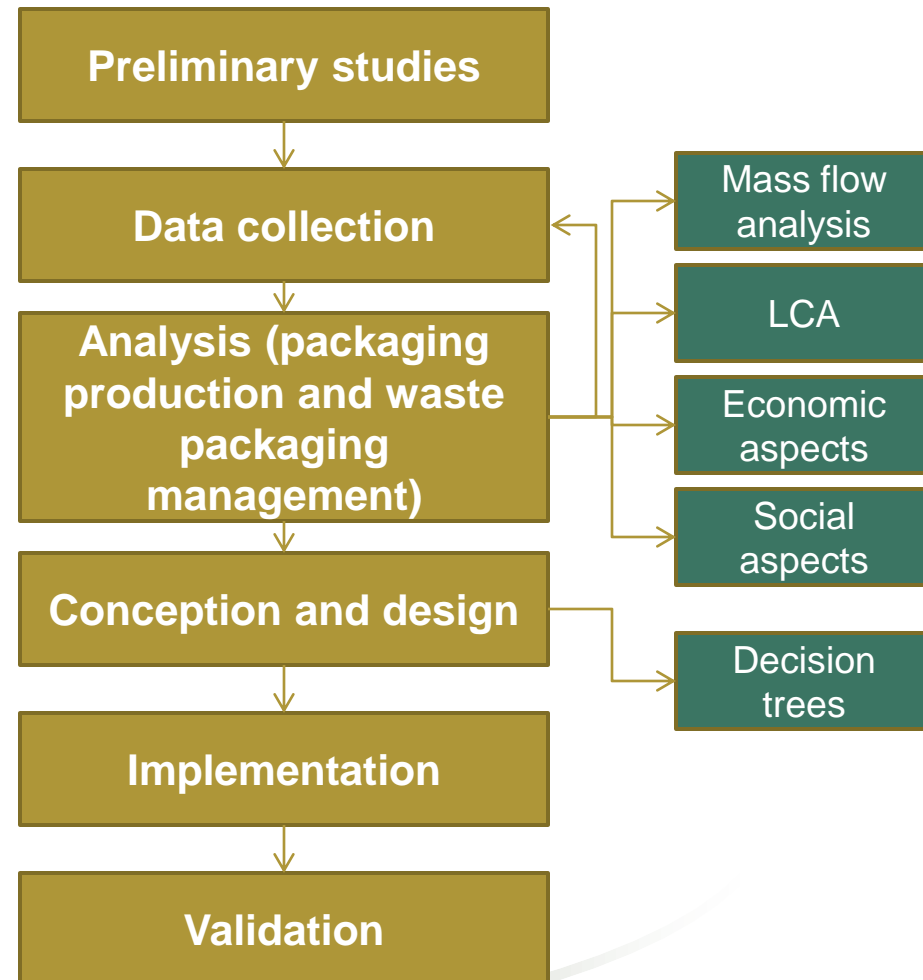
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What is done

- Preliminary Studies (how fee could be defined)
- Information Collection (municipal systems, ERSAR, EGF, APA, Logoplaste,...)

Next Steps:

- Analysis of systems of packaging production and processing waste packaging (e.g.Life Cycle Analysis)
- Conception and design multicriteria model
- Intelligent expert system implementation
- Validation and testing



Expected results:

- Obtaining a software tool for calculating the sustainable Green Dot Fee;
- Promotion and incrementing the ecodesign of packaging;
- Development of a prototype for use by SPV that could be used, in the long term, by packages producers with objective to innovate the design of packaging.

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