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## **Use of economic instruments in the EU 27 and waste management performances**

Study funded by the European Commission

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Shailendra Mudgal  
sm@biois.com



**1** BIO Intelligence Service

**2** Background and objectives

**3** Landfill / Incineration taxes and fees

**4** Pay as you throw schemes

**5** Producer Responsibility Schemes

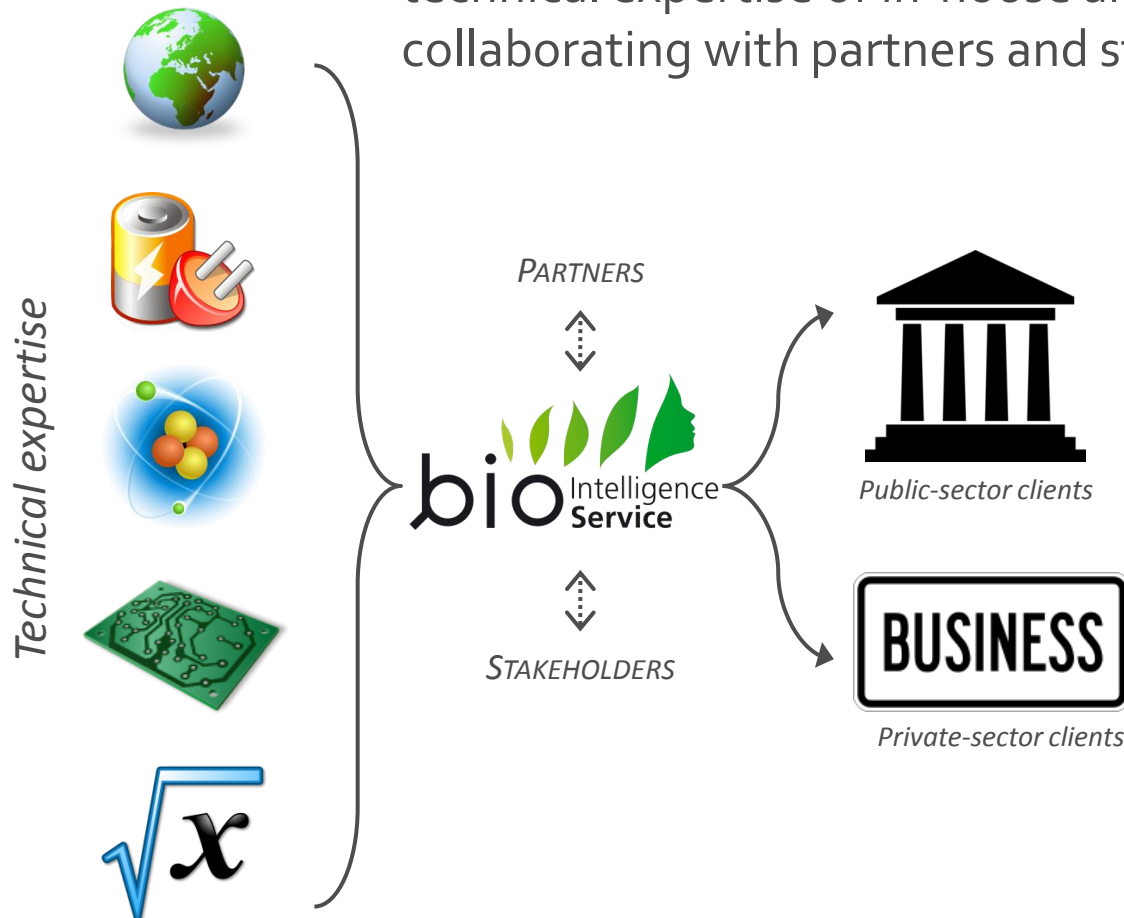
**6** Policy options

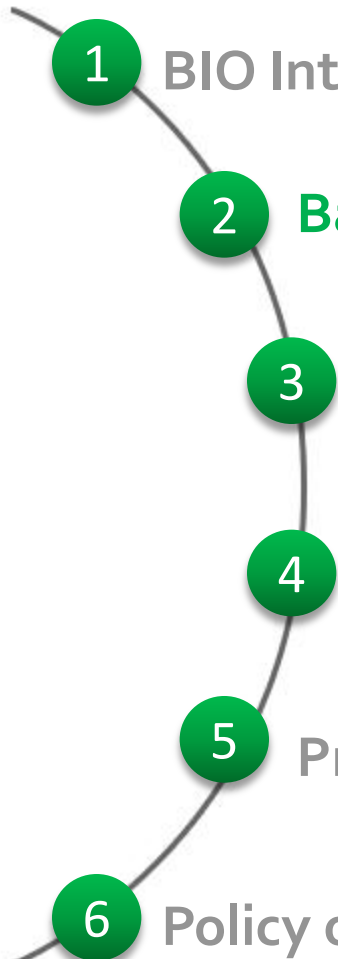
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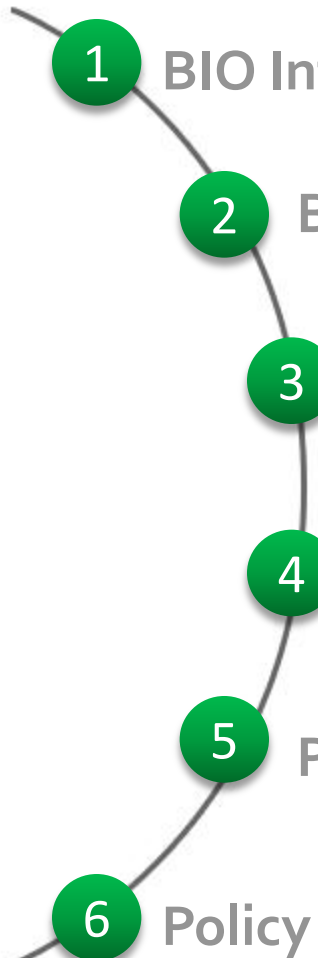
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  - 2 **Background and objectives**
  - 3 Landfill / Incineration taxes and fees
  - 4 Pay as you throw schemes
  - 5 Producer Responsibility Schemes
  - 6 Policy options

- This study was launched as a follow-up to the **Report on the Thematic Strategy on the Prevention and Recycling of Waste** which was published in January 2011
- The study demonstrates **differences between Member States** in the implementation of EU legally binding minimum targets and **clear links** between the performance of Member States and the **use of economic instruments**
- This study was conducted under the framework contract on **Sustainable Management of Resources**, led by BIO Intelligence Service <http://www.eu-smr.eu>
- The project team for this specific study was led by the **Institute for European Environmental Policy**
- Relevant links
  - ✓ Project website: <http://ei-waste.eu-smr.eu>
  - ✓ European Commission webpage: <http://ec.europa.eu/environment/waste/use.htm>

**The objective of the study was to analyse the performances of the waste management systems in different MS and the use of Economic Instruments.**

Key elements:

- Identification of the various economic instruments used by the MS in relation to waste management → focus on **recycling and waste prevention**
- Analysis of the potential impacts of the use of economic instruments at EU and MS levels through a modelling exercise and definition of the main possible options
- EIs studied included Landfill and incineration fees and taxes, PAYT schemes and producer responsibility schemes (for specific waste streams)
- Evaluation of the potential of moving towards **an EU approach** on the application of EIs

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- 1 BIO Intelligence Service
  - 2 Background and objectives
  - 3 **Landfill / Incineration taxes and fees**
  - 4 Pay as you throw schemes
  - 5 Producer Responsibility Schemes
  - 6 Policy options



- A distinction is made between:
  - ✓ **landfill taxes** - a levy charged by a public authority for the disposal of waste
  - ✓ **gate fees** - a charge set by the landfill operator for the provision of the service
- The sum of the tax and the gate fee represents the **total charge** for the disposal of waste in a landfill

## Key findings

- 19 MS have landfill taxes in place for the disposal of non-hazardous municipal waste sent to legal landfills. Gate fees are charged in all MS. Landfill restrictions for unsorted or untreated municipal waste exist in 14 MS.
- The total charge to landfill one tonne of municipal waste in the EU **ranges widely** from €17.50 in Lithuania to up to €155.50 in SE, same is true for landfill taxes, from €3 in Bulgaria to €107.49 in The Netherlands.

## Waste management performances

- There is a relationship between (higher) **landfill taxes** (and total charges) and (lower) **quantity of municipal waste** being sent to landfill
- **Landfill restrictions** also have an influence on forcing landfill rates to low levels
- Higher landfill charges tend to push waste towards **recycling and composting**. However, the correlation between increasing landfill tax and decreasing rates of MSW landfill is not apparent for all MS
- The two MS with the highest landfill taxes for **inert/C&D waste** (Denmark and The Netherlands) demonstrate the highest levels of recycling of such waste
- There is a trend for landfill tax rates **increasing** over time
- Taxes alone cannot enable **zero landfilling** but the rather shift the priority to material recovery.

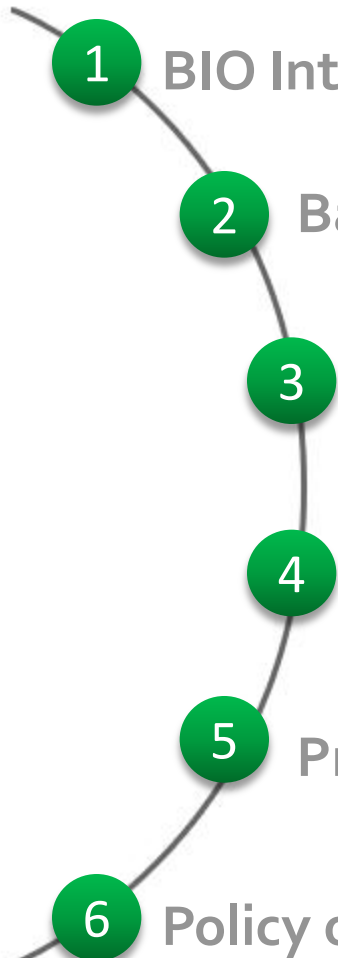
As for landfills, the same distinction can be made between **incineration fees and taxes**

## Key findings

- Only 6 MS were found to have incineration taxes in place for the disposal of municipal waste, and incineration gate fees were identified in 12 MS
- The level of taxation **ranges very widely**, from as little as €2.40 per tonne in France to €54 in Denmark while total charges from €46 in Czech Republic to €174 in Germany

## Waste management performances

- There is a general trend that **higher incineration charges** are generally associated with higher percentages of municipal waste being **recycled and composted**
- All MS that have incineration taxes also have landfill taxes, and in every case the **landfill tax is higher than the incineration tax** → helps to push waste treatment up the waste hierarchy

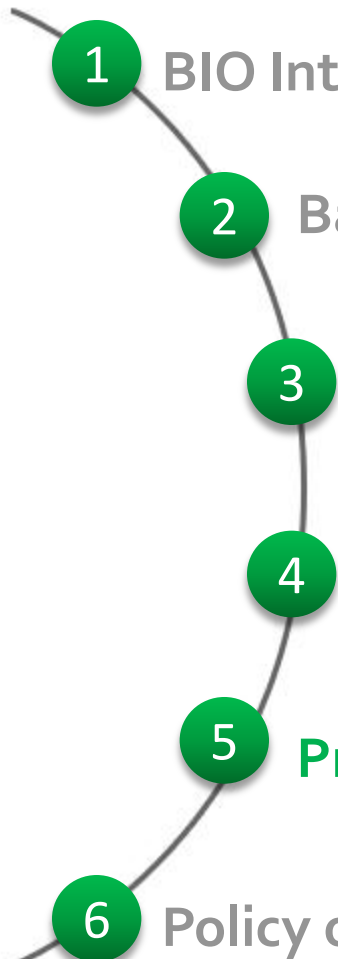
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## Key findings

- 17 MS employ PAYT systems for municipal waste → only three MS (Austria, Finland, and Ireland) have PAYT schemes in place in all municipalities
- 16 MS use **volume-based** schemes, 15 use **frequency-based** schemes, 9 use **weight-based** schemes, and 6 use **sack-based** schemes
- There is a broad range of both **the basis for charging** and the **amounts charged** → fees per kg range from €0.17 (Slovakia) to €0.36 (Sweden)
- The **coverage varies widely**, from a very small proportion in ES (Catalonia only) and the United Kingdom, to over 20% of municipalities in the Netherlands, 40% of the population in Luxembourg, and up to nationwide coverage in Austria, Finland and Ireland

## Waste management performances

- PAYT schemes appear to be most effective when the fees payable by households are **high enough to encourage** reflection by householders on their waste generation behaviour
- There are arguments for not making charges so high that they give a strong incentive for **illegal dumping**
- Performance in specific countries:
  - ✓ In Austria, increased PAYT fees may have had a limited dampening effect on waste generation
  - ✓ In Finland, residents who compost waste at home realise large savings over those who separate their compostable waste for separate collection and those who do not separate compostable waste.
  - ✓ In Germany and Ireland, weight-based PAYT schemes observed a significant reduction in household waste generation in the first year of its introduction

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  - 2 Background and objectives
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	Packaging	WEEE	ELVs	Batteries	Tyres	C&D	Farm plastics	Total
AT	•	•	•	•	•	•	?	6
BE	•	•	•	•	•	-	•	6
BG	•	•	•	?	•	-	-	4
CY	•	•	•	•	•	-	-	5
CZ	•	•	•	•	•	-	-	5
DK	•	•	•	•	•	-	-	5
EE	•	?	•	•	•	-	-	4
FI	•	•	•	•	•	-	-	5
FR	•	•	•	•	•	-	•	6
DE	•	•	•	•	-	•	•	6
EL	•	•	•	•	•	-	-	5
HU	•	•	?	?	•	-	-	3
IT	•	•	•	•	•	-	-	5
LV	•	•	•	•	•	-	-	5
LT	•	•	•	•	•	-	-	5
LU	•	•	•	•	-	-	-	4
MT	•	•	•	•	-	•	-	5
NL	•	•	•	•	•	-	•	6
PL	•	•	•	•	-	-	-	4
PT	•	•	•	•	•	-	-	5
RO	•	•	?	?	-	-	-	2
SK	•	•	•	•	•	-	-	5
SI	•	•	?	•	•	-	-	4
ES	•	•	•	•	•	•	?	6
SE	•	•	•	•	-	-	?	4
UK	•	•	•	•	-	•	-	5
<b>Total</b>	27	26	24	24	21	6	5	133

Rationale

Main reasons

Variety of approaches



# Producer responsibility schemes - Panorama

	Waste oils, oil filters	Paper, card	Medicines, medical waste	Plastic bags	Photo-chemicals, chemicals	Newspapers	Refrigerants	Pesticides, herbicides	Lamps, lightbulbs, fittings	Other (covered by only one Member State)	Total
AT	•	•	•	-	-	-	•	-	•	Bulky waste (metals, glass, plastics and wood); Expanded polystyrene; Plastic foils	8
BE	•	•	•	•	•	•	-	-	-	Disposable plastic kitchenware	7
BG	-	-	-	•	-	-	-	-	-	-	1
CY	•	•	-	-	-	-	-	-	-	-	2
CZ	•	-	-	•	-	-	-	-	-	-	2
DK	•	•	-	-	-	-	-	-	-	-	2
EE	-	•	•	•	-	-	-	-	-	-	3
FI	-	•	-	-	-	-	-	-	-	-	1
FR	•	•	•	-	•	-	•	•	-	Agricultural twine and netting; Clothes, household linen, shoes; Gas cylinders for domestic use; Household and professional furniture; Ink and ink cartridges; Mobile homes	12
DE	•	-	-	-	-	-	-	-	-	Commercial waste	1
EL	•	-	-	-	-	-	-	-	-	-	1
HU	-	-	-	?	-	-	-	-	-	-	0
IT	-	-	-	-	-	-	-	-	-	-	0

## Key findings

- Producer fee schemes for packaging have been identified in **24 MS** → Denmark, Hungary and The Netherlands apply taxation systems and deposit-refund systems
- **Mix approaches:** deposit-refund, taxation, 'Green Dot' – fee per tonne of material
- **Very wide ranges** of fees per tonne of packaging material placed on the market
  - ✓ Fees charged for paper range from €8.37 in Romania to €175 in Germany
  - ✓ Fees for glass range from €4.80 in France to €260.93 in Lithuania

## Waste management performances

- The efficiency and effectiveness of the schemes also depends on the **proportion of costs** waste management that are actually **covered by producers' contributions** → in only three MS (Austria, Belgium and Germany) were found to cover the full costs to local authorities/waste collection authorities
- Perhaps the **inclusion of the full cost** of packaging waste collection and treatment in the producer fee scheme played a role in **meeting Packaging Directive's targets** → all three of the MS whose producer fee schemes cover full costs had met the targets by 2008
- **No conclusive patterns** were observed which link the fees paid into producer fee schemes with the packaging recovery/recycling performance in the MS → 'cheap' schemes demonstrate high levels of recovery/recycling and 'expensive' schemes demonstrate low levels of recovery/recycling

## Key findings

- Producer responsibility schemes for WEEE have been identified in **25 MS** → comparable data on costs paid into the schemes proved difficult to find
- WEEE schemes were found to charge fees base on:
  - ✓ the amount placed on the market by producers (per item or per kg) or
  - ✓ the turnover of the company and length of time active in the market, or
  - ✓ vary according to the contracts negotiated with waste management firms

## Waste management performances

- The efficiency and effectiveness of schemes depends on the **proportion of costs** of collection, recycling and recovery of WEEE that are **covered by producers' contributions** → 8 MS were found to cover the full costs of these activities
- Where WEEE is **collected separately, it is widely recycled**: for 23 MS where recycling rates can be calculated, the average recycling rate was 75.8%
- Based on the only three MS for which comparable data were available, it appears that:
  - ✓ where contributions for large appliances are made **per item**, a higher cost of contribution is associated with **higher recovery and recycling** rates.
  - ✓ where contributions for large appliances are based on a cost **per kg**, there does not appear to be such relationship
  - ✓ for small appliances, there does not appear to be such relationship, whether the contributions are per item or per kg

## Key findings

- ELV producer responsibility schemes have been identified in **24 MS** → several MS (BE, BG, DK, GR, LV, LT, NL, PT, UK) have 'eco-organisms' to coordinate take-back and recovery.
- **A variety of approaches:**
  - ✓ In Czech Republic, the person who registers a used vehicle makes a contribution based on the **EURO standard** of the vehicle
  - ✓ In Denmark, the **car owner** makes an annual financial contribution to finance when the ELV is delivered for dismantling
  - ✓ The **producer/importer** pays a financial contribution in Finland (a one-off joining fee and a small fee per car sold), The Netherlands (a fee per new car registration, ultimately passed on to the consumer), Portugal (a fee based on the number of vehicles sold) and Slovakia (a contribution per kg of vehicle to a recycling fund)


## Waste management performance

- By 2008, 22 MS had met or exceeded the 2006 reuse and recycling target in the ELV Directive (only CY, FR, IE, PL had not; data was not available for MT)
- 8 MS had already met or exceeded the 2015 reuse and recycling target
- Also by 2008, 18 MS had met or exceeded the 2006 reuse and recovery target (data was not available for MT)
- Austria was alone in already having met or exceeded the 2015 reuse and recovery target
- Conclusions have not been drawn on the performance of MS in relation to collection, recovery and recycling/reuse of ELV due to lack of comparable data

## Key findings

- The study identified producer responsibility schemes for batteries in **24 MS**
- The schemes **charge fees** to producers based on the amount of batteries placed on the market, either **per kg, per battery, or according to market share**
- The MS determine the cost based on the **type of battery**, and the classification of batteries varies from country to country:
  - ✓ consumer/vehicle/industrial battery in Austria and Lithuania
  - ✓ the chemical content of the battery (e.g. lead-acid/nickel-cadmium/alkaline/zinc carbon/lithium/button/lithium ion) in Latvia and Portugal
  - ✓ size or weight of battery in Cyprus and Slovakia
- No conclusions made on the performance of MS, mainly due to the lack of data



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- A selection of potential policy options have been suggested for consideration by the Commission, to promote an 'optimal' use of EIs by the MS:
  - ✓ **Option 1 - Setting a minimum level of landfill tax to be applied in all MS** → developing a common method for calculating a minimum tax level could be developed, and taxes could be more strongly encouraged in the worst performing MS.
  - ✓ **Option 2 - setting criteria/producing guidance for the design of producer responsibility schemes** → the most successful producer responsibility schemes appear to share some common features and design features may influence the success of EPR schemes.
  - ✓ **Option 3 – Encouraging the use of charging that ensures waste generators face incentives in line with the waste hierarchy** → provide incentives to producers to reduce waste generation and to make use of cost-effective recycling services



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[intelligence@biois.com](mailto:intelligence@biois.com)