



This project is co-funded by the European Union and the Republic of Türkiye

Technical Assistance for Assessment of Türkiye's Potential on Transition to Circular Economy

EuropeAid/140562/IH/SER/TR

Policy and economic instruments for more sustainable waste management in the EU

Activity 3.1.3 Assessment of Economic Instruments used in Integrated Waste Management Workshop

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29-30 April 2024

Ankara

Outline

- Part 1: Extended Producer Responsibility and Eco-modulation of fees
- Part 2: Economic instruments: Landfill and Incineration Taxes, Pay-As-You-Throw (PAYT) systems


Part 1: Extended Producer Responsibility and Eco-modulation of Fees

Extended Producer Responsibility (1)

Extended producer responsibility – producers (and other actors) assume the responsibility for the environmental impact of their products and cover the costs for (in some cases organize) collection, sorting and treatment of post-consumer waste.

- Regulation of EPR in the EU: **the EU Waste Framework Directive (2008/98/EC)** - requirement for member states to establish EPR schemes
- **Minimum scope of EPR cost coverage**
 - separate collection, transport and treatment (taking into account the revenues)
 - awareness raising,
 - data gathering and reporting
- **Specific Obligations of the MS**
 - monitoring and enforcement mechanisms to reduce free-riding
 - a public body to oversee the implementation - for countries with multiple EPR schemes
- **Specific obligations for PROs**
 - geographical and product coverage
 - appropriate waste collection systems
 - financial means or financial and organizational means
 - self-control mechanism

Extended Producer Responsibility (2)

- The first EPR policy appeared in the EU in the early 1980s and spread across different Member States
- **Regulatory Framework for Specific Products** 
 - Certain products subject to specific laws and regulations that outline mandatory requirements for environmental sustainability.
 - provide a comprehensive framework for regulating the life cycle of these products, ensuring their responsible management
- **Eco-design for Sustainable Product Regulation (ESPR)**
 - Products that do not have dedicated legislation mandating environmental sustainability requirements, such as furniture paints, usually fall under the Eco-design for Sustainable Product Regulation (ESPR).
 - This regulatory framework covers 31 different product groups, and serves as a comprehensive guideline for promoting sustainable design principles and practices.
- While European waste legislation provides the enabling framework, national legislation by Member States specifies the operational aspects of EPR systems.
- EPR policies designed and implemented in a very heterogeneous manner across EU.
- EPR systems can be applied to a number of waste streams, but are not suitable for all types of waste

The Packaging Waste Directive,
The End-of-Life Vehicles (ELVs) Directive
The Batteries Directive
The Waste Electrical and Electronic Equipment (WEEE) Directive

EPR implementation in the EU: Packaging (1)

- EPR systems are different in each country but have common basic principles, such as packaging and product design improvement for greater recyclability or reusability, and reduce materials used, especially virgin materials;
- Producer responsibility for packaging waste is organised relatively evenly across the MS through either competitive or monopolistic PRO systems
- Other approaches:
 - Hungary: National Waste Management Agency took over the coordination of the recycling of packaging waste from 1st January 2012.
 - In Croatia, EPR for waste packaging is organised via fee payments to a central fund (Expra 2021; PRO Europe 2019).
 - Denmark: tax-based internalisation of packaging waste management costs rather than setting up an industry-run funding system.
- EPR schemes will become mandatory for all packaging by end-2024

EPR implementation in the EU: Packaging (2)

Good practice: Public Registry, Germany

- With the Packaging Act coming into force all manufacturers and initial distributors of packaging are since January 2019 obliged to register with a public register, the Zentrale Stelle Verpackungsregister (ZSVR).
- ZSVR is also responsible for registering the quantities of packaging placed on the market by each producer, monitoring data reporting and declarations of completeness, as well as quality control of the data submitted.
- The ZSVR is collectively financed by all PROs in proportion to their respective market share and is monitored by the German Environmental Protection Agency (Umweltbundesamt; UBA) (Stiftung zentrale Stelle Verpackungsregister 2020a).
- The complete list of all registered manufacturers and initial distributors is accessible to everyone in the public section of the packaging register LUCID. With more than 200,000 companies registered and a corresponding participation rate of about 76% in 2020 the ZSVR has already made a significant contribution to increasing the participation rate of producers in the German EPR scheme.

• Source: [*adelphi study Analysis of EPR Schemes July 2021.pdf \(erp-recycling.org\)](#)

EPR implementation in EU: Electrical and electronic equipment

- In most Member States, producer responsibility for WEEE is implemented via multiple competing PROs, with only 5 countries opting for a monopolistic scheme: Belgium, Netherlands, Luxembourg, and Cyprus.
- Hungary and Croatia are the only states within the European market without a PRO as they are collecting EPR fees via a state fee/tax (Expra 2021; PRO Europe 2019).

Good practice: Efficiency rewards for WEEE collection points, Italy

- The cost structure of the Italian EPR system for WEEE includes a feature called “Efficiency Rewards” for WEEE collection points. Efficiency rewards are financial bonuses paid by PROs to collection points following collection, provided that the amount of WEEE collected reaches or exceeds certain volume thresholds.
- Appliances that were cannibalised (e.g. refrigerators without compressors) are not counted towards the thresholds.
- This practice not only improves the collection efficiency, but also counteracts WEEE cannibalism and improves the overall quality of the collected WEEE (CDC RAEE 2018; Baldé et al. 2020; Croci et al. 2018).

• Source:

Source: [*adelphi study Analysis of EPR Schemes July 2021.pdf \(erp-recycling.org\)](#)

EPR implementation in EU: Batteries and End-of-life vehicles

Batteries

- Management of waste batteries is subject to the Directive on batteries and accumulators and waste batteries and accumulators (Batteries Directive 2006/66/EC). Inter alia, it prohibits the marketing of batteries containing certain hazardous substances, requires the establishment of schemes for collection and recycling and sets out targets.
- The 'Regulation concerning batteries and waste batteries' (2023) establishes end-of-life requirements, including collection targets and obligations, targets for the recovery of materials and extended producer responsibility.
- For batteries the first EPR schemes started in the early 1990s (Austria, Belgium), others followed in the late 1990's (Germany, France, Spain), but the majority were only implemented in the 2000's.
- Producer responsibility is in most countries managed via multiple competing PROs. Monopolistic systems exist in only 6 countries, most of which are among the smaller countries in terms of area. In Croatia, EPR for waste portable batteries is organised via fee payments to a central fund.
- EPR fee does not take into account criteria such as design for durability and reusability, rechargeable cycles, recyclability or the use of sustainable battery materials.

End-of-life vehicles

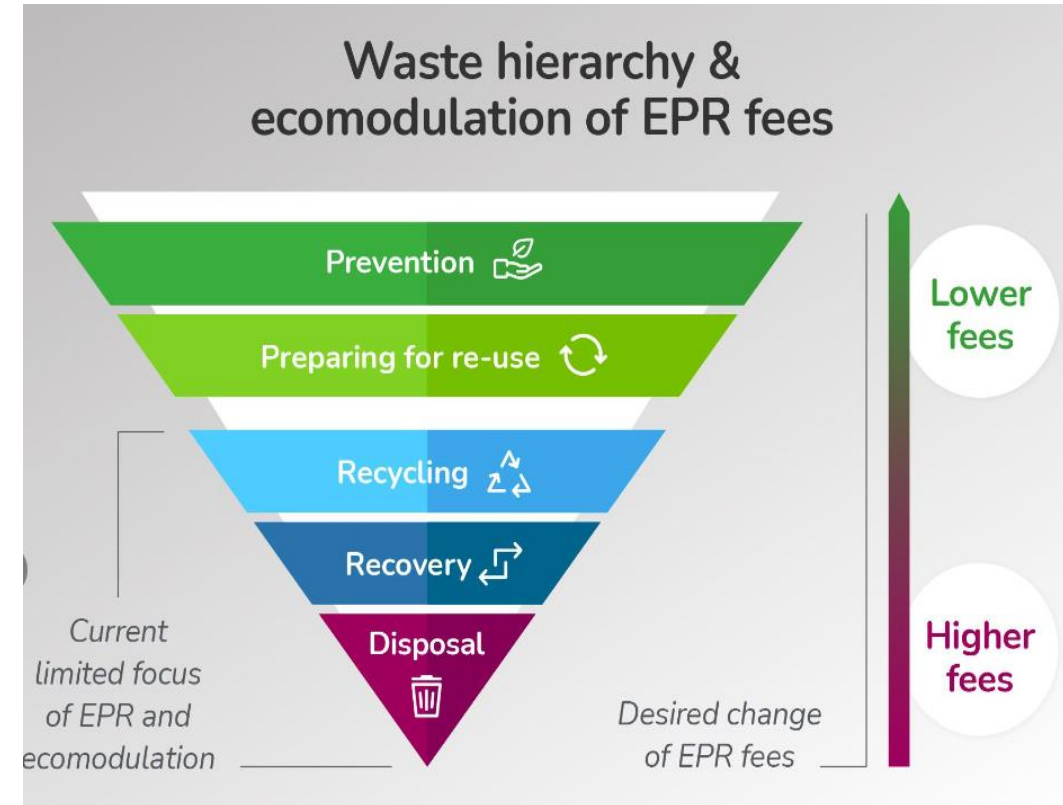
- Proposal for a Regulation on circularity requirements for vehicle design and on management of end-of-life vehicles (2023)
 - Focus on incentives to increase collection of ELVs and improve waste treatment, via establishment of EPR requirements to increase collection of ELVs and to compensate costs for improved treatment quality
 - specific measures on “cross-border” EPR mechanisms, designed to ensure that waste management operators in the Member States where ELV are treated are not placed at disadvantage.

EPR and textile waste

- An amendment of the Waste Framework Directive is pending with a focus on textiles waste.
- Purpose: more circular and sustainable management of textile waste, in line with the vision of the EU Strategy for Sustainable and Circular Textiles.
- Proposal for introduction of a **mandatory and harmonised Extended Producer Responsibility (EPR) schemes for textiles in all EU Member States**
- The level of the financial contributions of the producers will be based on the circularity and environmental performance of textile products (referred to as "eco-modulation").
- Will foster research and development in innovative technologies that promote circularity in the textile sector.
- Will ultimately incentivise producers to design more circular products.

Eco-modulation in the EU

- The 2018 revision of the Waste Framework Directive (2008/98/EC) as part of the first Circular Economy Action Plan of 2015, introduced the idea of ecomodulation of EPR
- Ecomodulation of fees can play a vital role in prioritizing design for as waste prevention, reusability, reparability and recyclability.
 - Products or packaging with circular design (e.g., a minimum percentage of recycled content, high reparability index, reduction in weight of material, shift from low to easily recyclable material(s)) could benefit from reduced fees,
 - Products with design barriers could incur higher fees.



Source: [Extended Producer Responsibility and Ecomodulation of Fees | Ecologic Institute](#)

Adoption of eco-modulation of fees in the EU

- **Packaging**

- Eco-modulation of fees is most widely adopted in 26 European MS, with simple modulation of fees, i.e. a varied fee structure for different type of materials, such as plastics, glass, paper etc.
 - E.g. Reusable packaging is given exemption from EPR fees in Belgium. In Estonia, consumer packaging does not need to be declared as long as it is being reused. (focusing on waste prevention); Fostplus in Belgium charges Euros (€) 200 per ton for transparent colorless PET as compared to € 400 per ton for colored PET (which complicates recycling) – focusing on end of life

- **Electrical and electronic equipment**

- France is only one European MS using fee modulation explicitly for EEE. The criteria used in the French system include:
 - Post-consumer recycled (PCR) plastic content;
 - Ease of disassembly;
 - Ease of upgrade;
 - Availability of spare parts;
 - Availability of technical information to facilitate professional repair;
 - Lack of coatings that can inhibit recycling;
 - Lack of hazardous substances (any brominated flame retardants); and
 - all LED (lamps only)

Adoption of eco-modulation of fees in the EU

- **Batteries:**

- As per the new Batteries regulation PROs shall ensure that the financial contributions paid to them by producers are modulated by battery type and battery chemistry (also criteria such as rechargeability, level of recycled content in the manufacture of batteries) (Art. 4a)
- Advanced battery EPR system in France for considering criteria for eco-modulation.

- **Textiles**

- EPR introduction is planned with the EU Strategy for Textiles.
- France is the only country in the EU that implemented a mandatory EPR scheme for end-of-use textiles.

Example from France: EPR scheme for end-of-use textile

- Producers primarily fulfil this obligation by contributing financially to a PRO, Eco TLC, which currently represents 95% of the textiles industry in France.
- Eco TLC has three scales of eco-modulation: EM1 with the objective to encourage durability of textiles and footwear by giving a bonus of 50% on EPR fees per item; EM2 and 3 (EM3) to promote the integration of recycled materials from production process or post-consumer textiles.

Source: [Extended Producer Responsibility and Ecomodulation of Fees. Opportunity: Ecomodulation of Fees as a Way Forward for Waste Prevention \(ecologic.eu\)](#)

Principles of successful EPR systems

- EPR, if done properly leads to
 - Increased transparency, mobilization of significant financial resources, increased collection and material recovery rates
- Successful EPR systems depend on:
 - Establishing clear definitions of producers and their obligations (such as setting targets for collection and recovery) and developing stakeholder coordination.
 - Transparency to enable monitoring and evaluation
 - Clear responsibilities of PROs
 - Sufficient funding for good EPR coverage

Part 2: Economic instruments for supporting recycling and reducing landfill:

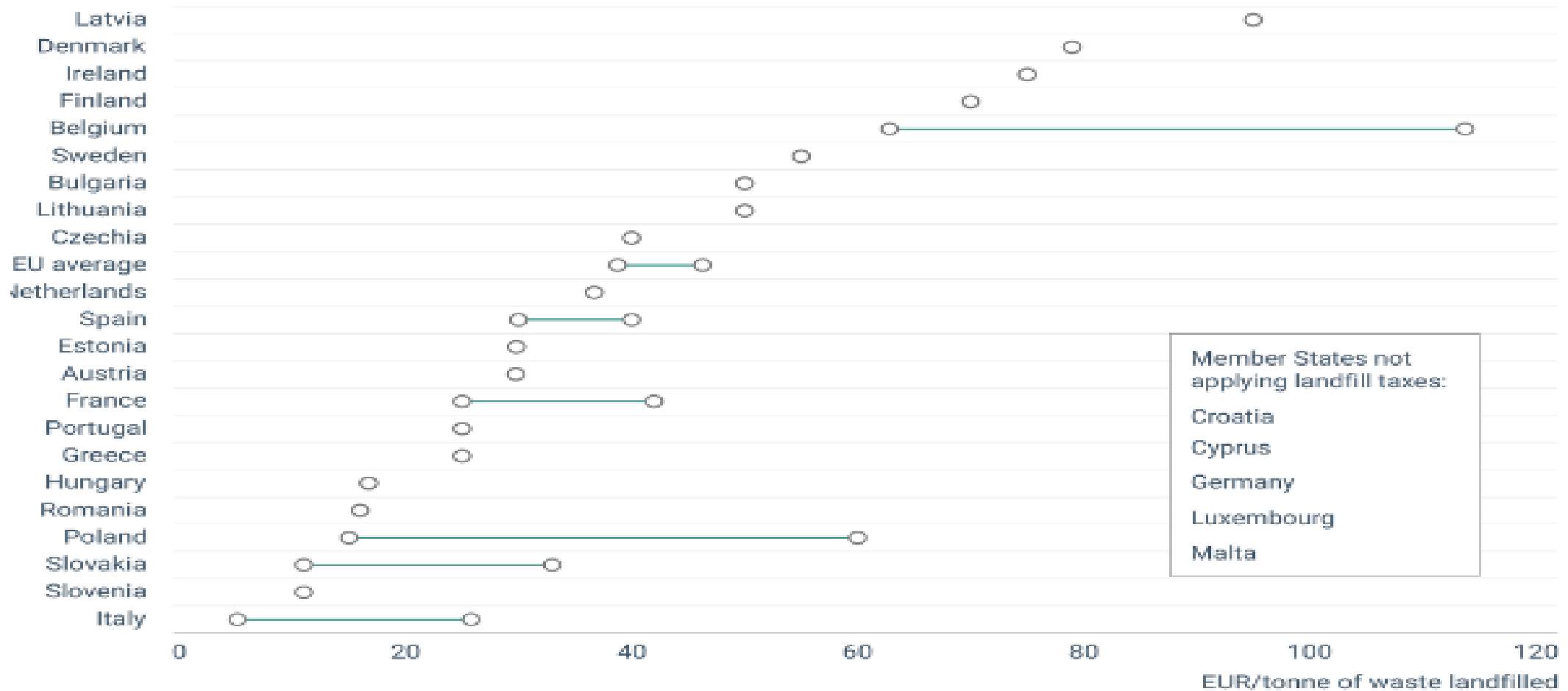
- Landfill taxes
- Incineration taxes
- Pay-as-you-throw systems

Landfill/Incineration Taxes

- EU Landfill Directive (1999/31/EC) and Waste Incineration Directive (2000/76/EC) setting standards for landfilling and incineration
- **Landfill taxes:**
 - levied on the landfilling of certain wastes.
 - Aims at making landfilling these wastes more expensive and thus recycling and prevention more competitive,
 - Aims at incentivising pre-treatment and/or generate revenue that can be invested in better waste management.
- Landfill taxes are currently applied in 22 EU Member States.
- **Incineration taxes** are levied on the incineration of certain wastes with the aim of making incinerating them more expensive and thus recycling and prevention more competitive.
- Sometimes set at a lower level if incineration with energy recovery is used than if incineration without energy recovery is used.



Overview of taxes on the landfilling of municipal waste in EU Member States, 2023



Source: <https://www.eea.europa.eu/publications/economic-instruments-and-separate-collection>

Overview of taxes on the incineration of municipal waste in EU Member States, 2023



Source: <https://www.eea.europa.eu/publications/economic-instruments-and-separate-collection>

Landfill bans

- A regulatory instrument often combined with landfill taxes
- EU Member States ban different types of waste:
 - Belgium, Estonia, Hungary, Lithuania, Luxembourg, the Netherlands, Slovakia (from 2024) and Slovenia ban the landfilling of **untreated municipal waste**.
 - Belgium, Czechia, Denmark, Finland, Slovenia and Sweden ban the landfilling of **biodegradable waste**.
 - Austria, Germany, Luxembourg and Slovenia ban the landfilling of **waste exceeding a certain total organic carbon value**.
 - Poland and Sweden ban the landfilling of **combustible waste** and Czechia (from 2030) bans the landfilling of waste exceeding **a certain calorific value**.
 - Cyprus, Czechia, France, Malta and Slovenia ban the landfilling of **separately collected recyclables** and Latvia (from 2030) bans the landfilling of **recyclable waste**.
 - Poland bans the landfilling of **separately collected bio-waste**.

Pay-As-You-Throw (PAYT) systems



- Key features of PAYT systems:
 - variable fee structures based on the weight or volume of the waste generated targeting household waste at its very source
 - households responsible for the quantity of waste discarded
 - aims to reduce the generation of waste, and in particular residual waste, as well as increasing waste sorting at household level.
- Different PAYT schemes implemented across the EU:
 - *Advanced PAYT systems* provide a direct and visible economic incentive at the time the waste is generated. (E.g. waste collectors weighing waste containers on pick-up so that waste producers pay by weight of waste generated; sack-based systems, whereby citizens buy waste sacks from the municipality or service provider).
 - *Basic PAYT systems* are, for example, volume-based systems that depend mainly on the size of the container and sometimes also take into account the collection frequency when determining the collection fee. (e.g. households can choose the number or size of the containers for mixed municipal waste when the service contract is agreed).

Pay-As-You-Throw (PAYT) systems across the EU

- Across the EU, PAYT systems are a commonly used economic instrument
- The majority of MS already have a PAYT system of some sort in place for at least part of the population.
- Most of these Member States have introduced legislation that requires the use or development of PAYT systems or allows municipalities to introduce such systems.
- Fourteen MS use a mix of advanced and basic PAYT systems, and another six use basic PAYT systems only.
- No Member State uses only advanced PAYT systems.
- Three of the six Member States that currently do not use a PAYT system have firm plans in place to implement one.

Overview of the type and population coverage of PAYT systems for households in the EU-27, 2022

		Type of PAYT system in place		
		Mixed advanced/Basic	Basic	No PAYT
Population coverage of the PAYT system	High	Austria Belgium Croatia Ireland Slovenia	Finland Hungary Sweden	
	Medium	Denmark Lithuania Luxembourg Romania	Estonia	
	Low	Czechia Germany France Netherlands Slovakia	Spain Italy	
Plans for implementation of PAYT				Cyprus Greece Malta
No plans for implementing PAYT				Latvia Poland Portugal

Note: No information was available for Bulgaria. Poland applies a PAYT system to only non-household waste producers. Further details are provided in the [Technical note](#).

Source: Compiled by the ETC CE based on the [EEA early warning assessments related to the 2025 targets for municipal waste and packaging waste](#) (EEA and ETC CE, 2022).

Source:
<https://www.eea.europa.eu/publications/economic-instruments-and-separate-collection>

Conclusions

- There is no single approach will achieve high recycling rates and divert waste from landfill
- A coherent and consistent combination of instruments needed
- The effectiveness of the economic instruments depends how they are designed, implemented and enforced
- Further reading:
 - On economic instruments: [Technical note accompanying the EEA briefing 'Economic instruments and separate collection – key instruments to increase recycling' — European Environment Agency \(europa.eu\)](#)
 - On EPR and ecomodulation of fees: [Extended Producer Responsibility and Ecomodulation of Fees. Opportunity: Ecomodulation of Fees as a Way Forward for Waste Prevention \(ecologic.eu\)](#)



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