

## The Efficient Management OS Urban Waste to Promote the Circular Economy

Roberta Fernandes de Faria

University of Coimbra and FCT, Portugal

### ABSTRACT

In 2020, the European Commission adopted its second Action Plan for the Circular Economy, increasing the targets to be met by the member states and encouraging a change in the environmental and economic paradigm - from a linear system to a circular system. As established by the European Union (COM (2020) 98 final), an efficient management of urban waste and its recovery, by cities and the citizens who live in them, contributes to the current transition to a circular economy, and, for this to happen, they need to motivate the selective disposal of urban waste to increase recycling rates. Thus, the polluter pays principle must be applied fairly and effectively, with the use of PAYT (pay as you throw) systems, that is the best way to motivate the selective disposal of urban waste, increasing recycling and promoting the circular economy.

### \*Corresponding author

Roberta Fernandes de Faria, University of Coimbra and FCT, Portugal.

**Received:** March 11, 2024; **Accepted:** March 12, 2024; **Published:** March 25, 2024

**Keywords:** Circular Economy, Urban Waste, PAYT, Polluter-Pays Principle

### Common Polices in Waste Management and in Circular Economy

First, we bring here a brief history of European policies and legislation that deal with natural resources and waste: The Treaty on the Functioning of the European Union, in article 191<sup>o</sup>, defends that European environmental policies will contribute to the pursuit of the prudent use of natural resources and, the European Parliament, in Decision 1386/2013, warned that the health of the environment results from an economy where nothing is wasted and where natural resources are sustainably managed. The European Council, in the 7th Environmental Action Programme (7<sup>th</sup> EAP) identified the need to turn waste into resources, and thus the first Action Plan for the Circular Economy (COM (2015) 614 final), which has already been updated in 2020 by the European Commission (COM (2020) 98 final), considered that the way waste is collected and managed can lead to high rates of recycling and raw materials with potential for reinvestment in the economy, being essential to take measures to improve waste management practices to reach the 65% recycling target by 2035.

At the end of 2019, the European Environment Agency published a report entitled «The European Environment — state and outlook 2020» (SOER), bringing worrying results, which requires a solution and immediate actions to minimize the unsustainable use of resources, adopting, the European Commission, shortly thereafter, the European Green Deal, to respond to these environmental challenges. Based on a regenerative growth model that gives back to the planet more than it takes from it, this pact outlines the environmental priorities for the coming years and the European Union's ambition to transform its economy with a view to a sustainable future.

The European Green Deal reinforced the circular economy, which is a concept based on the prevention, reduction, reuse and recycling of materials, replacing the end-of-life concept of the linear economy, with circular flows in an integrated process. It represents a key option for the sustainable development, enhancing the efficient use of resources and reducing environmental impacts.

The specific wastes legislation, the Directive 2018/851 EU, determines that to improve recycling, wastes must be collected selectively and not mixed with other wastes or different materials and, in this sense, the Action Plan for the Circular Economy (COM (2020) 98 final) states that high-quality recycling depends on effective selective waste collection.

However, here is the problem: A large part of recycling is associated with the selective collection of common materials from urban waste (glass, paper, metals, plastic) and, despite so many policies to safeguard natural resources and encourage the recycling and the reuse of materials, currently the Europe has low rates of selective collection of urban waste and very far from the proposed targets for 2050, also indicating insufficient recycling.

The policies described above indicate that it is necessary to implement innovative solutions to value materials and recover resources from wastes, in addition to implementing innovative solutions for identification, tracking, separation, prevention and decontamination of wastes contaminated with hazardous substances.

In Europe today, urban waste management systems must be based on principles of environmental sustainability, with a view to promoting the prevention of waste production, its separation and preparation for reuse and recycling, recovery and disposal, but

also financial balance, and the costs of the operations necessary for its processing must be reflected in an adequate tariff system.

In Europe Union, the most common waste management pricing model, in which the citizen pays according to water consumption, does not seem fair, legally, and does not encourage the separation of urban domestic waste. So that there is justice and equity in the payment of public urban waste management services provided to citizens, the tendency is for the retribution of services provided to be based on the real value of waste produced.

It is essential that Europe increases the efficiency of selective collection methods and makes tariffs more flexible in accordance with good waste management practices in compatibility with the polluter-pays principle, in order to respond to the new challenges of the circular economy. Thus, the “Pay-as-you-throw” (PAYT) systems apply, in a fair and balanced way, the polluter-pays principle, encouraging the reduction of waste production and encouraging its separation, since the less waste if you produce less, you pay, that is, the tariff for the urban waste management service, paid monthly by end users, is now calculated based on the amount of undifferentiated waste collected. With the PAYT system, citizens pay an amount that varies according to the number of times their container of undifferentiated waste is collected, which means that the less waste there is, the fewer times it will be necessary to collect the container and the lower the payment, encouraging, thus, the separation of waste, its subsequent recycling and contributing to a circular economy [1-15].

## References

1. (2013) European Parliament Decision No 1386/2013/ EU of the European Parliament and of the Council of 20 November 2013 on a General Union Environment Action Programme to 2020 ‘Living well, within the limits of our planet’. Europa <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32013D1386>.
2. (2018) Report on the implementation of the 7th Environment Action Programme. European Parliament - Report - A8-0059/2018 [https://www.europarl.europa.eu/doceo/document/A-8-2018-0059\\_EN.html](https://www.europarl.europa.eu/doceo/document/A-8-2018-0059_EN.html).
3. (2015) European Commission - Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Closing the loop - An EU action plan for the Circular Economy. COM/2015/0614 final <https://www.eumonitor.eu/9353000/1/j9vvik7m1c3gyxp/vzpj6v9jiu8>.
4. (2020) European Commission - Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions a new Circular Economy Action Plan For a cleaner and more competitive Europe. COM/2020/98 final <https://www.eumonitor.eu/9353000/1/j9vvik7m1c3gyxp/vl6vh7khf4n9>.
5. (2019) The European environment - state and outlook 2020, Knowledge for transition to a sustainable Europe. European Environment Agency [https://d2ouvy59p0dg6k.cloudfront.net/downloads/soer\\_2020\\_executive\\_summary\\_embargoed\\_4\\_december.pdf](https://d2ouvy59p0dg6k.cloudfront.net/downloads/soer_2020_executive_summary_embargoed_4_december.pdf).
6. (2019) European Commission - Communication from the Commission to the European Parliament, The European Council, The Council, The European Economic and Social Committee and The Committee of The Regions the European Green Deal. Com/2019/640 Final <https://www.eumonitor.eu/9353000/1/j9vvik7m1c3gyxp/vl4cnhyplort>.
7. (2014) European Commission - COM/2014/0398 final Communication from The Commission to The European Parliament, The Council, The European Economic and Social Committee and The Committee of The Regions. Towards a circular economy: A zero waste programme for Europe <https://www.eumonitor.eu/9353000/1/j9vvik7m1c3gyxp/vjl4tamjogxb>.
8. Portugal - Resolution of the Council of Ministers n.º 190-A/2017 <https://files.diariodarepublica.pt/1s/2017/12/23602/0005400073.pdf>.
9. (2019) FCT (Fundação para a Ciência e Tecnologia). Agenda Temática de Investigação e Inovação Economia Circular, FCT, Lisboa <https://catalogo.biblioteca.fct.pt/cgi-bin/koha/opac-detail.pl?biblionumber=9036>.
10. Ellen MacArthur Foundation (2013) Towards the Circular Economy: economic and business rationale for an accelerated transition. Ellen MacArthur Foundation <https://www.ellenmacarthurfoundation.org/towards-the-circular-economy-vol-1-an-economic-and-business-rationale-for-an>.
11. European Commission (2016) Assessment of separate collection schemes in the 28 capitals of the EU. (Referência: 070201/ENV/2014/691401/SFRA/A2), Brussels, Belgium.
12. (2013) Managing municipal solid waste - a review of achievements in 32 European countries, EEA report3/2013, Office for Official Publications of the European Union. European Environment Agency <https://www.eea.europa.eu/publications/managing-municipal-solid-waste>.
13. (1992) The Polluter Pays Principle: Definition, Analysis, Implementation. Paris: OCDE [https://read.oecd-ilibrary.org/environment/the-polluter-pays-principle\\_9789264044845-en#page1](https://read.oecd-ilibrary.org/environment/the-polluter-pays-principle_9789264044845-en#page1).
14. Shanahan Martin (2018) Can Economics Assist the Transition to a Circular Economy?. In Unmaking Waste in Production and Consumption: Towards the Circular Economy <https://www.emerald.com/insight/content/doi/10.1108/978-1-78714-619-820181004/full/html>.
15. Ellen MacArthur (2014) Towards the Circular Economy: Accelerating the scaleup across global supply chains. World Economic Forum [https://www3.weforum.org/docs/WEF\\_ENV\\_TowardsCircularEconomy\\_Report\\_2014.pdf](https://www3.weforum.org/docs/WEF_ENV_TowardsCircularEconomy_Report_2014.pdf).

**Copyright:** ©2024 Roberta Fernandes de Faria. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.