

WASTE LEGISLATION AND THE CIRCULAR ECONOMY

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Abstract: *The circular economy transforms the traditional economic model by introducing those models of production and consumption that ensure the reuse and recycling of materials and products. The life cycle of the products is thus much extended. However, any product will at some point become waste. This article sets out how waste legislation supports or even imposes the circular economy by (i) regulating the notion of by-product (ii) introducing mandatory recycling targets and (iii) specific criteria for recycling certain categories of waste.*

Key words: *waste, circular economy, by-product, reuse, recovery.*

1. Introduction

The circular economy is a new concept, appeared in the counterweight of the traditional economy characterized by "take-make-consume-throw away", and which is based on sharing, leasing, reuse, repair, refurbishment and recycling, in an (almost) closed loop, where products and the materials they contain are highly valued. In practice, it implies reducing waste to a minimum. (Bourguignon, 2016, p. 1)

Therefore, the literature abounds on the various aspects that the circular economy can cover in practice, from concept, definition and limits (Korhonen, 2018, p.37; Kirchherr, 2017, p.221; Kirchherr, 2018, p.264) to consumption patterns (Camacho-Otero, 2018, p.2758), connection with the new type of industry (Rajput, 2019, p.98) and of the importance of integrated resources (Velenturf, 2019, p. 963).

But concrete actions to implement the circular economy at international, Union or state level are often closely linked to the regulations in force that allow, constrain or support them.

This article makes a short study on the union and implicitly national regulations related to the achievement of the circular economy, starting from the end point of the classical economy or the turning point of the circular economy - waste.

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2. Waste vs. by-product

2.1. The notion of waste and by-product

The Waste Directive 98 of 2008 is the regulatory act of the European Union (EU) which currently establishes the general regulatory framework in this field. This directive has imposed at EU level, and implicitly at national level, the following definition of waste: any substance or object which the holder discards, intends or is required to discard. (Directive, 2008, p.9)

Although it seems simple, the notion of waste still has many practical aspects which, in order to be clarified, are brought before the Court of Justice of the European Union in the form of references for a preliminary ruling.

Trying to support the circular economy, the directive introduces the notion of by-product which in 2008 was a notion that could be taken into account or not, from 2018 it becomes mandatory, as it is shown "Member States shall take appropriate measures to ensure that a substance or object resulting from a production process the primary aim of which is not the production of that substance or object is considered not to be waste, but to be a by-product". (Directive, 2018, p.121)

The Commission's interpretative communication on waste and by-products in 2007 opened the 2008 Directive 98, stating that one of the many problems with interpreting the concept of waste is the distinction between what is to be considered waste and what can be by-produced.

This is because "there is not a black and white distinction, but rather a wide variety of technical situations with widely differing environmental risks and impacts and a number of gray zones. However, for the purposes of applying environmental legislation, it is necessary to draw a clear line between the two legal situations on a case-by-case basis" (Communication, 2007, p.3).

This distinction was difficult to apply, all the more so as the notion of non-waste was used alternatively for the notion of by-product, production residues, by-products or derivatives or secondary raw material. Although all these notions were technically or technologically correct, they did not have a legal meaning - the materials represent waste or not (Communication, 2007, p.3)

Legislation about the notion of by-product is a first step for the legislation in supporting the circular economy, promoting sustainable use of resources and industrial symbiosis. (Directive, 2018, p.111) The aim is to reduce the existence of different solutions in similar situations, adopted by the competent authorities of different Member States - which can lead to inequalities in the treatment of economic operators and obstacles to the internal market. (Communication, 2007, p.4).

Thus the notion of by-product is associated with a substance or object that results from a production process but whose main objective is not their production (Directive, 2018, p.122), but only if: (i) its subsequent use is safe; (ii) may be used directly, without further processing other than that required by ordinary industrial practice; (iii) is produced as an integral part of a production process; and (iv) its subsequent use is lawful, the substance or object meets all relevant product, environmental and health requirements for the specific use and will not produce overall harmful effects on the environment or on public health.

2.2. Relevant case law

The evolution of the jurisprudence and the relative lack of legal clarity of the notions of waste or by-product have resulted in the difficulty of the competent authorities and the economic agents to uniformly apply the specific regulations and to implement the principles of the circular economy. Clarification of the notions is imperative given the nature of the sanctions in question, which are often found in the area of criminal penalties.

As mentioned, the notion of waste is also related to the intention to dispose, a notion that can cover all objects and substances that the owner / holder gets rid of, even if they have a commercial value and are collected for commercial purposes for recycling, recovered or reused (Case, 2002, p.29).

The Court has ruled that a good, material, or raw material resulting from a manufacturing or extraction process which does not have as its main object the production thereof may not constitute a residue but a by-product which the undertaking does not wish to dispose of, but which it intends to exploit or market under economically advantageous conditions, in a subsequent process, without carrying out any prior processing operation (Case, 2008, p.42). However, in view of the obligation to interpret the concept of waste extensively in order to limit inconveniences or adverse effects inherent in their nature, the Court restricted the use of by-product reasoning to situations where the re-use of a goods, material or raw materials is not only possible but safe without any prior processing and further production process (Case, 2008, p.44).

3. Termination of Waste Status

The regulations on the cessation of waste status are also included in the aid of the circular economy.

Unlike the previous situation when determining the status of an object or a substance between by-product and waste, we will now investigate the obligations established in order to end the status of waste.

Article 6 of Directive 98 of 2008 requires Member States to take appropriate measures to ensure that waste which has undergone a recycling or other recovery operation is considered to have ceased to be waste if it complies with the following conditions: (i) the substance or object is to be used for specific purposes; (ii) there is a market or demand for the substance or object in question; (iii) the substance or object meets the technical requirements for the specific purposes and complies with the laws and regulations applicable to the products; and (iv) the use of the substance or object will not have an adverse effect on the environment or human health. (Directive, 2008, p.11) As the Commission is monitoring the development of national end-of-waste criteria in the Member States and assessing the need to develop criteria at Union level on this basis, it is useful to investigate national regulations. Thus, Law 211 of 2011, which transposes Directive 98 of 2008, shows at art. 6 paragraph (4) (Law, 2011, p.1) that national regulations concerning the termination of waste status are:

- Law no. 249 of 2015 on the management of packaging and packaging waste, a law that establishes not only measures to prevent the production of packaging waste but also the obligations to recycle packaging and other forms of recovery of packaging waste. Thus, the law imposes on art. 14 recycling of at least 55% of the total weight of packaging materials contained in packaging waste, with the achievement of minimum values for the recycling of each type of material contained in packaging waste, as follows: 60% by weight for glass and for paper / cardboard; 50% by weight for metal; 15% by weight for wood; 22.5% by weight for plastic, considering only recycled plastic material. It should be noted that the reuse of packaging, unlike the notion of recycling, does not involve the classification of those packaging as waste. According to lit. g) of Annex 1 to the law, reusable packaging is considered packaging waste when disposed of at the end of its useful life. Reusable packaging is not considered packaging waste when returned for reuse. (Law, 2015b, p.1)

- Law no. 212 of 2015 on the management of vehicles and end-of-life vehicles, states in Article 1 that "establishes measures aimed at preventing the formation of waste from end-of-life vehicles, reuse, recycling and other forms of recovery of end-of-life vehicles and their components in order to reduce waste disposal and to improve the environmentally sound activity of economic operators involved in the life cycle of vehicles, in particular of economic operators directly involved in the treatment of end-of-life vehicles. " (Law, 2015a, p.1) Recycling, in this case, is a special obligation for car manufacturers as well, as they must ensure that they integrate an increased amount of recycled materials into vehicles and other products, precisely in order to develop markets for recycled materials (art.3).

In this case, in addition to car manufacturers, the circular economy also targets economic operators who carry out car maintenance and repair operations, as they have the obligation to hand over for recycling or recovery the replaced materials and parts that constitute waste (art. 11).

With regard to collection and treatment operators, the law sets out in Annex II the minimum requirements to be met by collection and treatment units of end-of-life vehicles, in order to minimize the impact on the environment, collection, dismantling and recycling. end-of-life vehicles, as well as the safe disposal of the resulting waste for the environment and human health. This normative act also sets recycling targets, but they are also associated with reuse, together representing at least 85% of the average mass per vehicle and year (art. 15).

- Government Emergency Ordinance no. 5 of 2015 on waste electrical and electronic equipment, which states in Article 1 that "establishes measures to reduce the overall effects of the use of resources by improving the efficiency of the use of these resources, according to the provisions of art. 1 and 4 of Law no. 211/2011 on the waste regime, in order to contribute to a sustainable development. "(Ordinance, 2015, p.1)

Recycling targets are set as minimum targets by category of WEEE, but also in this situation are included recycling actions / operations. So:

a) 80% are prepared for reuse and the WEEE included in category 1 or 4 of annex no. 2 to the emergency ordinance, i.e. large household appliances and electrical appliances and photovoltaic panels;

b) 70% are prepared for reuse and the WEEE included in category 2 of annex no. 2 to the emergency ordinance, i.e. small household appliances;

c) 55% are prepared for reuse and the WEEE included in category 5 or 6 of annex no. 2 to the emergency ordinance, i.e. lighting equipment and electrical and electronic tools, except for large fixed industrial ones

d) WEEE included in category 3 of annex no. 2 of the emergency ordinance are the only ones that must be recycled, for which the percentage is 80%. This category includes computer and telecommunications equipment. (Directive, 2012, p.28)

- Government Decision no. 1132 of 2008 on the regime of batteries and accumulators and waste batteries and accumulators, which "aims to improve the environmental performance of batteries and accumulators and activities related to all economic operators involved in the life cycle of batteries and accumulators, respectively producers, distributors and end-users and in particular operators directly involved in the treatment and recycling of waste batteries and accumulators." (Government Decision, 2008, p.1)

Recycling, in the case of waste batteries and accumulators, requires primarily the existence of a deposit system, which returns to the buyer the amounts of money paid in advance to the seller to purchase these goods, provided the existence of electrolyte in this waste. Apart from this option, a collection system is organized that allows end users to dispose of waste portable batteries and accumulators and requires distributors who supply them to receive them free of charge when they become waste.

Recycling itself is regulated in the form of the efficiency of this process, data which can be found in Annex 3 Part B to the normative act. Also in this field, at EU level there is Commission Regulation (EU) 493/2012 detailing rules regarding the calculation of recycling efficiencies of the recycling processes of waste batteries and accumulators which, in order to determine the improvement of existing technologies and the development of new waste technologies. recycling and treatment, requires the achievement of recycling efficiency levels by each recycling process. (Regulation, 2012a, p.9)

Common to all these normative acts is the fact that in this way the market is required to adopt a circular economy. In this context, good practices in the field have been developed such as best available techniques for the automotive and electrical and electronic equipment. (Salcă-Rotaru, 2021, p.44)

4. Specific Recycling Criteria regulated at EU Level

Research on waste streams (Report, 2014) showed that there would be a double benefit if specific regulations were drawn up on the conditions under which, at least for certain waste, recycling is carried out. The appearance of these regulations is related to the provisions of art. 6 of Directive 98 of 2008 and covers scrap metal of iron, steel, aluminum and copper, glass waste and waste batteries and accumulators.

The common points of these regulations, binding on all Member States, are: (i) the existence on the market of a large quantity and demand for the use of this waste and (ii) the need to reduce the pressure on the exploitation of natural resources.

At this time, the following regulations are being developed:

a) Council Regulation No 333/2011 establishing criteria for certain types of scrap metal to cease to be waste by being used as scrap iron, steel and aluminum that can be used as raw material in steelworks, smelters, aluminum refineries and remelting units for metal production. (Regulation, 2011, p.3)

b) Council Regulation no 715/2013 establishing criteria determining when copper scrap ceases to be waste. (Regulation, 2013, p.14)

c) Council Regulation no 1179/2012 establishing criteria determining when glass cullet ceases to be waste. (Regulation, 2012b, p.31)

In order to achieve the greatest possible collection of this waste and its introduction into the circular economy, and thus reduce the pressure on the exploitation of natural resources, the regulations provide a set of specific criteria that meet both the relevant waste standards and industry specifications to be able to recycle them.

These standards and specifications are necessary because they must comply with both the technical requirements of the industry and the legislative standards of quality and consumer protection for the products made, whether they come from raw materials or recycled materials. In general, there is a need for quality management with documented sets of procedures.

5. Conclusions

Waste management legislation is constantly changing and adapting to new environmental requirements and recycling and recovery technologies. The introduction of circular economy elements in waste management expands the production and consumption model by horizontally connecting the legislation specific to this field with the legislation specific to environmental design, innovation and extension of producers' responsibilities.

Waste recycling requirements, in the form of specific targets or criteria, have both an immediate impact on the economy by increasing employment related to the development of this sector and a mediated impact by reducing pressure on raw material sources and thus avoiding an increase in production prices and products.

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