

EXTENDED PRODUCER RESPONSIBILITY – THE ANSWER TO IMPLEMENTING CIRCULAR ECONOMY

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Abstract: *The implementation of sustainable development principles and the prioritization of the circular economy as a healthy alternative to economic growth force manufacturers to change their vision of production by incorporating effective measures and innovative techniques in order to protect the environment.*

Each Member State, including Romania, committed itself to the implementation of European legislation last year by properly transposing the circular economy package and ensuring sustainable economic development through the implementation of responsible production principles. An eloquent example would be the „polluter pays” principle, which implies the continued responsibility of producers and their involvement in a European Sustainable Development Mechanism, by internalizing the financial effort to protect the environment in the final price of the product, at the shelf.

Although this principle was governed by Directive 2004/35/EC on Environmental Liability, transposition of the Directive has been progressively slow, with great differences between the Member States, even though the principle from which it started was the same: European producers to be accountable for both the pollution prevention action and the repair of any environmental damage, by providing the necessary expenses both with the prevention and the repair of the damages.

The extended producer responsibility, as provided for in the European circular economy package, must be implemented by identifying sustainable production practices that do not jeopardize the productivity indices of economic agents.

It seems to be the equation that will determine Europe’s success in the battle of global economic development (especially with the United States and with China), the main unknown of which consists precisely in the identification of innovative production methods that respect the very fragile economy-environment ratio.

Keywords: *Circular economy, extended producer responsibility, recycle, waste.*

1. INTRODUCTION

Sustainable development is one of the main objectives set by the European Union through its leading institutions, in the medium and long term. By re-introducing secondary primary resources into the economic flow, it will be possible to increase EU competitiveness on the global market by addressing one of the most pressing problems of producers: resource shortages. The identification of innovative production methods that respect the production/ environment relationship by protecting the nature from the harmful side effects of economic activity will allow the gradual elimination of irreversible damage to soil, water, air, flora and fauna. Circular economy is therefore the unique solution of two of the biggest problems faced by the economy at macro level: increasing competitiveness and securing the raw materials needed for production under the conditions of limited, exhausting natural resources. Here’s how the

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circular economy can indirectly generate solutions to a range of geopolitical issues: access to alternative resources could put conflicts between states (including armed conflicts) to control the exploitation of certain resources. Unfortunately, recent history has proven that the control of natural resources is still the decisive element in triggering military conflicts, economic embargos, conflicting diplomatic relations between states, seriously damaging the development.

Changing the whole philosophy of the production process cannot be achieved without the involvement and responsibility of the main actors: producers, consumers and state institution. In other words, the achievement of the objectives of the circular economy by the Member States, which has been set at European level through the adoption of the Circular Economy Package, can only be achieved by implementing a widespread accountability of producers. **The principle of extended producers' responsibility** is based on the provision of a package of legislative measures to impose additional responsibilities on the producers for the collection and recycling of waste, as well as introducing forms of sanctioning them otherwise. In this way, considerable progress can be made in terms of both prevention and repairing possible damage to the environment, by obliging the manufacturer identified as responsible to provide the necessary financial resources (both for the prevention of damage and for repairing the negative effects produced in a specific environmental damage which was already produced). In order to achieve a unified European approach, we need not only a complete, concrete and coherent European regulatory framework, but also an effective transposition of national legislation, adequate implementation of the relevant rules and a transparent and effective reporting system, with measurable criteria able to allow comparative analysis of the evolution of all 27 Member States, in their process of meeting recycling targets. This will ensure the convergence of all Member States in terms of taking best practice and identifying the best solutions to increase the share of recycled / reused waste together with the decrease in the amount of waste generated/stored [1]. Achieving these goals depend substantially on both private and public financial allocations in the direction of building an efficient framework conducive to the development of the circular economy. In terms of public funds, they are mainly made up of European funds channeled through EU funding programs such as Cohesion Funds, LIFE Program- supporting innovation and recycling programs or COSME Program. As regarding European structural and investment funds (ESI funds) allocated under the Cohesion Policy in order to support the circular economy at the level of the European states and regions, it should be noted that although many of the thematic objectives to which the ESI funds are approved, in line with the 2020 Strategy, overlap with both the sustainable development objectives and, implicitly, with the objectives of the circular economy, the current legislative framework of cohesion policy does not clearly state the „circular economy” as a distinct category associated with the field of intervention [1].

That is why, in order to facilitate the correct and rapid implementation of the circular economy principles and to achieve the recycling targets set for 2025, 2030 and 2035, both the European institutions and the Member States are responsible for creating an economic environment which facilitates innovation and financing the recycling and re-use projects.

2. THEORETICAL BACKGROUND

Sustainable development and the transition from the linear economy to the circular economy require the implementation of clear environmental protection measures. The polluter pays principle is mentioned as an objective in Article 191 (2) of the Treaty on the Functioning of the EU. It states that „the Union's policy on the environment must pursue a high level of protection and must be based on the principles of precautionary action and preventive action, on the principle

of remedying, at source, damage to the environment and the polluter pays principle. It was implemented through the adoption of Directive 2004/35 / EC on environmental liability in relation to the prevention and repair of environmental damage. The process of transposition into national legislation was completed on 30 April 2007, with the exception of Croatia that transposed the Directive in 2013, but the recorded results are still fierce. Each Member State has set its own set of measures to make producers responsible both for preventing pollution and for repairing environmental damage. In the case of Romania, the transposition of Directive 2004/35 / EC was achieved through the adoption of Government Emergency Ordinance no. 68/2007 on environmental liability with regard to the prevention and repair of environmental damage.

The main measure consists in the fact that the costs related to the prevention, namely repairing the damages generated by the producers as a result of the economic activity carried out, would be transferred to the producer, which in turn will include them in the final price of the sold product.

3. PRODUCERS RESPONSIBILITY IN IMPEMENTING CIRCULAR ECONOMY

The transposition of the European directives on extended producer responsibility and the national legislation of the Member States has led European producers to change the economic model and production principles in order to protect the environment, while paying greater attention to the management of packaging. The „polluter pays” principle implies the financial responsibility of the European manufacturer, which will require covering the total costs of preventing and repairing the environmental damage produced by the economic activities carried out. Thus, the „polluter pays” principle means the internalization of the total costs generated by environmental protection obligations in the product’s marketing price. On the other hand, the change of the paradigm regarding the production process, by implementing the principles of the circular economy, means channeling financial resources of the economic agents towards meeting two major objectives: substantial investments in innovation (in order to provide innovative means of production, efficient equipment which does not pollute and allow the use of secondary raw materials, and even the allocation of increased funds to the research and development departments for identifying their own innovative solutions) as well as the provision of necessary funds associated with the producer’s extended responsibility (both at the stage of preventing the production of environmental damages and the repair of damages already caused by an environmental accident, generating the pollution of water, soil, fauna, flora, air). Europe’s economic competitiveness on a global scale will largely depend on the extent to which the European producer will be able to translate into reality the goals outlined in the strategies developed by the two European institutions with legislative attributions: European Commission and the European Parliament. As stated in the opinion of the Committee on the Environment, Public Health and Food Safety on Cohesion Policy and the Circular Economy, the transition from a linear economy to a circular model is no longer a simple option, making it mandatory. This prioritization of the implementation of the circular economy is mainly due to the positive effects it generates, both in terms of protecting the environment and at economic and social level. Thus, the report states that „moving to a circular economy would reduce the amount of waste, generate new high quality jobs, increase the competitiveness of SMEs, create opportunities for social integration, strengthen the development of clean technologies, improve energy efficiency and resource use and reduce raw material consumption and Europe’s dependence on imports of raw materials and energy” [5]. Considering that the unequal distribution of natural resources and the dependence of states on resource providers are elements that infiltrate power relations and geopolitical balance, essential consumption of natural resources, namely the identification of alternative resources and the protection of the environment, are essential objectives for European Union.

4. EXTENDED PRODUCERS RESPONSIBILITY ON PACKAGING (EPR)

The extensive liability of manufacturers regarding the management of packaging has been transposed differently into each of the 28 Member States' national legislation. The main benefits that the implementation of these principles generates consist in the good management of packaging waste, with the reduction of the total quantities of waste produced so as to meet the limits set by EU legislation, as well as the stimulation of differentiated collection, which contributes to the growth of the market secondary raw materials. Currently, the price of secondary materials exceeds the purchase price of resources, thus being inaccessible to some of the producers. Moreover, the secondary market is insufficiently developed, covering only 10% of the producers' need. Following the implementation of environmental protection principles, innovation in design and materials used in packaging is stimulated. However, about 60% of the produced waste is not recovered, thus making the transition to the circular economy more difficult. In the absence of sufficient secondary materials at affordable prices, manufacturers are forced to resort to the linear model of production. Producer responsibility extends over the entire life cycle of the product, being nagged in the recycling process of packaging. Therefore, the importance of ecological design is emphasized so as to stimulate the increase of the product lifetime through the possibility of repairing it, replacing parts, reuse or recycling. Equally, the environment is also protected by the European producers' assumption of the polluter pays principle, which allows accentuating preventive measures as well as repairing damage to natural resources: water, soil, protected species - providing the necessary funding for these actions.

4.1 Decoupling economic growth from the amount of packaging waste produced

Given the shortage of natural resources needed for its production, as well as the need to reduce the pace of extraction and use of natural resources, to maintain the growth rate and the well-being of European citizens, decoupling economic growth from the consumption rate of natural resources is imperative. However, the use of secondary raw materials depends on the pace at which the circular economy is imposed as a development model. As a consequence, achieving recycling targets becomes essential in changing the economic paradigm that Europe needs.

In this regard, the European Commission has set new recycling targets, which Member States have to meet in the medium and long term. The European rules on waste recycling and storage targets require the EU Member States a courageous sustainable development line, representing the most ambitious targets of this type at the global level. Thus, the total amount of municipal waste that will be reclaimed, resulting in secondary materials to be capitalized by reintroduction into the economic flow, will increase permanently as can be seen in Table 1.

Table 1: European targets for recycling municipal waste

An	Objective
<2025	55%
<2030	60%
<2035	65%

Source: European Commission, 2018a

As the manufacturer's responsibility has been extended over the entire life cycle of the product, packaging recycling has become mandatory. Thus, the involvement of the European manufacturer contributes to meeting the targets imposed on the recycling of packaging waste (Table 2).

Table 2: European targets for recycling packaging waste

Type of material	<2025	<2030
All packaging	65%	70%
Plastic	50%	55%
Wood	25%	30%
Ferrous metals	70%	80%
Aluminum	50%	60%
Glass	70%	75%
Paper and cardboard	75%	85%

Source: European Commission, 2018a

In order to achieve the targets imposed by the widespread accountability of the producers on the recycling of packaging waste, manufacturers are increasingly choosing environmentally-friendly, biodegradable packaging that meets consumer requirements and is increasingly aware of the environmental impact it causes. In this way, economic growth is disconnected from the production of packaging waste, and the targets for recycling and environmental protection are attained. Analyzing the statistical data collected at EU level, we find that the decoupling of the growth from the production and disposal of packaging waste has begun since 1998 (European Commission, 2014). Analyzing the statistical data for the period 2007-2016 provided by Eurostat, we can observe the tendency to decouple the growth from the production of packaging waste (Table 3).

Table 3: Decoupling economic growth from the total amount of packaging waste

Year	GDP/capita (euro/capita)	Packaging waste generated (kg/capita)	Packaging waste recovered (kg/capita)	Packaging waste recycled (kg/capita)	Packaging waste generate (thousands of tons)	Packaging waste recovery (thousands of tons)	Packaging waste sent for final disposal
2007	26200	163.3	118.4	96.6	81,521	59,119	22,402
2008	26300	163.1	118.6	98.7	81,723	59,440	22,283
2009	25000	152.8	113.9	95.4	76,802	57,237	19,565
2010	25500	156.3	119.5	99.3	78,747	60,232	18,515
2011	25900	159.1	123.3	101.5	80,115	62,088	18,027
2012	25700	156.3	123	101.2	78,895	62,068	16,827
2013	25700	157.2	124.5	102.7	79,581	62,995	16,586
2014	26100	163.1	128.4	106.9	82,791	65,168	17,623
2015	26700	166.6	131.5	109.5	84,844	66,976	17,868
2016	27100	169.7	136.3	114	86,689	69,632	17,075

Source: Based on data from Eurostat, 2019.

It can be noticed that the rate at which the amount of packaging waste per capita is growing is lower than both the rate at which the population's income increased (GDP / capita) and the rate at which the household expenditures on food and beverage increased. At the same time, the total quantity of packaging waste sent for final disposal drops considerably. Thus, if, in 2007, the total quantity of packaging waste which was sent for final disposal at EU level was 22,402 thousand tons, in 2016 there were only 17,075 thousand tons, with 5,327 thousand tons less. In other words, while economic growth is maintained and European citizens have access to high incomes, with the same consumption of food and beverages accounting for the same share of their total revenue, environmental effects are decreasing as a result of the increase in the total amount of recycled packaging waste.

4.2. Polluter pays principle (PPP): preventing and repairing the damages caused to environment by producers

The adoption of the circular economy package has led to an increase in the importance of the manufacturer's extended responsibility. The „polluter pays” principle means the producer's responsibility throughout the life cycle of the product, thus being involved in the recycling of packaging waste. At the same time, the manufacturer has responsibilities as to how he carries out his production activity. Production activity can cause damage to the environment, soil, water, air, protected species or natural habitat. [6] Producer responsibility arises in causing damage as a result of carrying out an activity of the kind expressly provided in Annex 3 of the Directive. Among these, we find all the activities involved in waste management (collection / transport / recovery / disposal), the discharge of pollutants into surface water or groundwater, the transport of dangerous or polluting goods as defined by Directive 96 / 49 / EC, the handling and transport of genetically modified organisms. By damaging the environment, European legislation understands any measurable negative change of a natural resource. [7]

In order to customize prevention and repair measures, it is important to classify damages. Depending on the natural resource affected, they can affect soil, water or biodiversity. According to data provided by Eurostat, the highest frequency of damage affects soil (52%), while water is affected by 28% of incidents and biodiversity by 20%. [13]

The difficult transposition of the 2004/35/EC Directive has allowed the centralization of a small number of cases. Since 2007, only 1245 cases of damage have been reported by the 27 states that have reported data to the Commission. Of these, a huge share is concentrated in two states: Hungary and Poland, which together account for 86% of the casuistry. At the same time, only 164 threats were reported to the Commission in which measures were taken in accordance with the Directive in order to protect the environment. These centralizations prove the inability to implement the Directive uniformly, and the lack of a unitary reporting system, easy to verify. [12]

5. CONCLUSION

As can be seen from the official reports drafted by the European Commission on the pace at which the provisions of Directive 004/35 / EC on the producer's extended liability are implemented, Member States still have difficulty in coping with the realization of European desiderata. The number of damage cases produced and repaired by manufacturers under the directives is still low and unevenly distributed. Manufacturers' involvement in packaging recycling is essential because new targets for recycling municipal waste and packaging waste imposed by the Commission for the next 5, 10 and 15 years. In this way, it will encourage and accentuate the pace at which decoupling economic growth from the production of packaging waste occurs and the environment will be protected from the effects of production without the competitiveness or well-being of European citizens being affected.

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