

# The European Legislation on End-of-Waste

Claudio D'Alonzo

**Abstract**—According to recent tendencies, progress on resource efficiency is possible and it will lead to economic, environmental, and social benefits. The passage to a circular economy system, in which all the materials and energy will maintain their value for as long as possible, waste is reduced and only a few resources are used, is one of the most relevant parts of the European Union's environmental policy to develop a sustainable, competitive and low-carbon economy. The concept of circular economy is to be found in Decision 1386/2013/EU of the European Parliament and of the Council on a General Union Environment Action Programme to 2020 named “Living well, within the limits of our planet”. To modernise waste management systems in the Union and to consolidate the European model as one of the most effective in the world, a revised waste legislative framework entered into force in July 2018. Regarding the Italian legislation, the laws to be modified are the Legislative Decree 3 April 2006, n. 152 and the laws ruling waste management, end-of-waste, by-products and, the regulatory principles regarding circular economy. European rules on end-of-waste are not fully harmonised and so there are legal challenges. The target to be achieved is full consistency between the laws implementing waste and chemicals policies. Only in this way, materials will be safe, fit-for-purpose and designed for durability; additionally, they will have a low environmental impact.

**Keywords**—Circular economy, end-of-waste, legislation, secondary raw materials.

## I. INTRODUCTION

PURSUANT to recent tendencies, further progress on resource efficiency is possible and that may lead to major economic, environmental and social benefits. Transforming waste into a resource is a crucial part of increasing resource efficiency and ensuring the functioning of a circular economy.

The transition to a circular economy system, in which the materials and energy keep their value for as long as possible, waste is minimized and only a few resources are used, is one of the cornerstones of the European Union's environmental policy to develop a sustainable, competitive and low-carbon economy.

Secondary Raw Materials (SRMs) are those materials which derive from recovery and recycling of waste, or from all the raw materials processing residues. If they are properly treated, it is possible to obtain a material identical to the one to be extracted, respecting the environment and avoiding diminishing raw materials. Common examples are glass and paper which are properly processed and put back on the market. In this way, waste is reintroduced at the beginning of the production chain, instead of ending its life cycle.

SRMs are the bond between respect and protection of the environment and the recovery of waste materials because goods which would have become waste are reintroduced into the production process.

Claudio D'Alonzo is a PhD in Business Law. He is currently a Researcher and Lecturer at Catholic University Our Lady of Good Counsel, Tirana, Albania

The uptake of SRMs may be helpful in improving the security of supply, reducing the use of natural resources and, consequently, the impact on the environment. The use of secondary materials not only can contribute to the circularity of the national economy, but also to the European Union. In fact, SRMs can be imported and exported, as it happens for raw materials.

Regarding the legislation in force, one of the most critical issues is by the regulation on end-of-waste (EoW), i.e., the recovery process at the end of which waste is no longer defined as such, but becomes SRM.

## II. LEGAL SOURCES

The first explanation of the concept of circular economy is to be found in Decision No 1386/2013/EU of the European Parliament and of the Council on a General Union Environment Action Programme to 2020 “Living well, within the limits of our planet” [1].

Furthermore, in 2015 the European Commission adopted the Communication “Closing the loop - An EU action plan for the Circular Economy”, which underlines the interdependence of all the processes of the value chain: from the extraction of raw materials to product design, from production to distribution, from consumption to reuse and recycling.

Within the Circular Economy Action Plan, after nearly two years of negotiation, an agreement was reached on the revision of the following directives:

- Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives;
- European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste;
- Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste;
- Directive 2000/53/EC of the European Parliament and of the Council of 18 September 2000 on end-of-life vehicles;
- Directive 2006/66/EC of the European Parliament and of the Council of 6 September 2006 on batteries and accumulators and waste batteries and accumulators and repealing Directive 91/157/EEC;
- Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE).

The proposals modified six Directives addressing the management of different types of waste. The proposals to change Directive 2008/98/EC, Directive 1999/31/EC, Directive 2000/53/EC, Directive 2006/66/EC and Directive 2012/19/EU were based on Article 192(1) TFEU, while the proposal to

(e-mail: claudiodal@yahoo.it).

amend Directive 94/62/EC was based on Article 114 TFEU.

The proposals, which were part of the Circular Economy Package and amended the six Directives mentioned above, had their grounds partially in the proposal that the Commission tabled in July 2014 and subsequently withdrew in February 2015. They were in line with the objectives of the Resource Efficiency Roadmap [1] and the 7<sup>th</sup> Environment Action Programme [2], including full implementation of the waste hierarchy<sup>1</sup> in all Member States, decline in absolute and per capita waste generation, ensuring high quality recycling and the use of recycled waste as the most important source of raw materials for the Union. They also contributed to the implementation of the EU Raw Materials Initiative [3] and addressed the need to prevent food waste. Furthermore, these proposals simplified the reporting requirements included in all six Directives.

The proposal to amend Directive 2008/98/EC responded to the legal obligation to review the waste management targets in that Directive [4]. It was submitted to the Parliament and to the Council, which made some changes to it. Therefore, the Circular Economy Package amended the six European Directives which ruled waste. As mentioned, these Directives were about waste, landfill of waste, packaging and packaging waste, end of life vehicles, batteries and accumulators and waste batteries and accumulators, and waste electrical and electronic equipment.

In December 2017, a broad agreement was reached by the Parliament, the Council and the Commission. The agreement was approved by the European Parliament in a plenary session on 18 April 2018 and on 22 May 2018 by the EU Council and published in the Official Journal of the European Union (OJEC) on 14 June 2018. The new Directive makes several changes to European legislation and must be implemented by member States by 5 July 2020.

### III. CURRENT EU LEGISLATION

Efficient waste management systems are an essential part of a circular economy. To modernise waste management systems in the Union and to consolidate the European model as one of the most effective in the world, a revised waste legislative framework [5] entered into force in July 2018. This includes:

- new ambitious yet realistic recycling rates<sup>2</sup>;
- simplification and harmonisation of definitions and calculation methods and clarified legal status for recycled materials and by-products;
- reinforced rules and new obligations on separate collection (bio-waste, textiles and hazardous waste produced by households, construction and demolition waste);
- minimum requirements for Extended Producer Responsibility;
- making waste prevention and waste management measures stronger, including also marine waste, food waste, and all

the products containing critical raw materials.

The Commission is supporting and engaging with Member States in the implementation of the waste legislation [6]. The purpose is to increase understanding of circular economy opportunities in those Member States that face the biggest challenges in meeting their recycling targets. Experts will visit different Member States, will share experiences, and will advise on how to reach best the objectives of the waste policies.

One of the institutions the new Directive has affected the most is the one pertaining to EoW. Article 1, paragraph 1, point 6, of Directive (EU) 2018/851 of the European Parliament and of the Council of 30 May 2018 has modified article 6 of Directive 2008/98/EC on waste. Member States are asked to adopt necessary measures to ensure that materials which has undergone a recycling or other recovery operation are no longer deemed waste if the substance or object is to be used for a specific purposes and if the other requirements of the previous directive are met.

Paragraph 2 is totally new and it now establishes that Commission will monitor the development of national end-of-waste criteria in Member States, and assess the need to develop Union-wide criteria on this basis. To that end, and where appropriate, the Commission will adopt implementing acts in order to establish detailed criteria on the uniform application of the conditions laid down in paragraph 1 to certain types of waste.

Paragraph 3 has been totally modified by the Directive in exam. This paragraph deals with national EoW criteria and it establishes that if criteria have not been set at Union level under paragraph 2, Member States may establish detailed criteria on the application of the conditions laid down in paragraph 1 to certain types of waste. Those detailed criteria will take into account any possible adverse environmental and human health impacts of the substance or object and will satisfy the requirements laid down in points (a) to (e) of paragraph 2.

Furthermore, paragraph 4, concerning case-by-case criteria, has been replaced and a new paragraph 5, regarding the natural or legal person who uses a material or places it on the market, has been added.

### IV. THE ITALIAN LEGISLATION

With regard to the Italian legislation, the laws which are likely to be amended are the Legislative Decree 3 April 2006, n. 152 (better known as Consolidated Environment Act), as well as all the laws ruling waste management, EoW, by-products and, more generally, the regulatory principles regarding circular economy.

Article 183, paragraph 1, letter a) of Legislative Decree 3 April 2006, n. 152 states that waste is made of substances discarded by the holder; these substances are indicated in a special attachment. The provision specifies that the management of waste concerns several phases, including

<sup>1</sup> The waste hierarchy gives preference to prevention first followed by reuse, recycling before energy recovery and disposal which includes landfilling and incineration without energy recovery.

<sup>2</sup> The revised waste legislation requires that by 2030, 70% of all packaging

waste and, by 2035, 65% of municipal waste should be recycled, while reducing landfilling of municipal waste to 10%. A 5-year time extension is granted to Greece, Croatia, Cyprus, Latvia, Lithuania, Hungary, Malta, Romania, Slovakia and Bulgaria.

transport. So, the notion of waste refers primarily to the concept of “discard”; subsequently, it is necessary to check whether the list under Article 185 of the Consolidated Environment Act contemplates that waste or not. In this way, it will be possible to ascertain if it is a by-product (Article 184 bis), or an EoW (Article 184 ter).

Having said that, in 2016 Law 28 December 2015, 221 (also called “Collegato Ambientale”) came into force, whose purpose is to promote a green economy and sustainable development. This law favours the adoption of the circular economy principles by the national system both through provisions on waste management and incentive measures. The rules embodied in this law introduce the notion of EoW and by-product, which are pivotal to a circular economy.

The creation of a circular economy has been favoured also with regard to excavation lands and rocks which are no longer classified as waste, but as by-products, thanks to the issue of Presidential Decree 13 June 2017, n. 120.

#### V. END-OF-WASTE

The rules of the European Commission, case law and years of experience establish when goods become waste. When that happens, EU waste legislation applies. The EU waste rules are stringent in order to protect human health and the environment. In a circular economy, materials should only stay in the waste phase for a limited time; this is because the aim is that they should be recovered and reintroduced into the economy to replace primary materials. In most cases, this may happen if materials which have been recycled are no longer considered waste.

Waste ceases to be waste when it meets the so-called “end-of-waste criteria”. For some waste streams such standards have been set at EU or national level. However, the scope of these rules and clarity on how they operate is lacking. The nature of waste streams, recovery processes and recovered materials means that EoW criteria that are applicable to whole waste streams are not easy to establish. As a consequence, many recovered materials are traded and used in the absence of established EoW criteria and therefore under an unclear legal framework and without transparency.

As a matter of fact, in the targeted consultation, the metals and the electricity industries reported difficulties in determining the waste or product status of materials such as coal ashes and copper slags. Different rules are applied across Member States, and even among different regions. This leads to problems in the trans-border transport of these materials and sometimes makes it impossible to derive useful resources from these materials, some of which are waste generated in quantities counted in millions of tonnes per year [7]. Uncertainties about the status of a material as a waste or a product is also an issue for authorities who many times deal with problems in determining whether waste or product legislation applies. This situation arises for example in deciding whether recycled PVC containing DEHP should still be considered waste or whether it should be treated as a product.

The production and use of hazardous chemicals and products are subject to strict EU rules adopted to protect workers [8],

citizens and the environment from harm. When a chemical is determined to be hazardous, it is classified as such, which leads to clear obligations for operators to ensure their safe handling.

Similarly, waste management is governed by EU rules adopted with the same objectives in mind so that dangerous waste is treated without harming the environment or human health. However, the two sets of rules are not fully aligned. There are situations where the same material, containing a hazardous substance, may be considered dangerous or not depending on whether it is waste or a product. This discrepancy means that it cannot be assumed that materials which re-enter the economy resulting from the recovery of non-hazardous waste will necessarily result in a non-hazardous product.

The way rules on the classification of waste are implemented and enforced has important consequences on future waste management choices, such as feasibility and economic viability of collection, recycling method or the choice between recycling and disposal. Such differences may have an impact upon the uptake of SRMs. For example, lead metal has a different classification depending on its waste or product status. Lead metal waste from construction and demolition activities is listed as non-hazardous waste in the European List of Waste. Lead metal as a product is classified as a hazardous substance under the EU legislation on classification, packaging and labelling of chemicals due to its harmful effects on reproduction. Another example is the case of flexible PVC waste containing certain additives, where often waste operators (mis)classify this waste as non-hazardous although the resulting recovered product will be classified as a hazardous chemical mixture under the CLP Regulation.

In Italy, the concept of EoW was introduced by the Legislative Decree 3 December 2010, n. 205 which implemented Directive 2008/98/CE. First of all, it must be underlined once more that EoW constitutes a process after which waste ceases to be waste and obtains a status of a product (or an SRM). Therefore, since this process eliminates waste from the environment, obtaining a product through its recovery, it is clear that it aims at protecting the environment and it plays a primary role in the realization of a circular economy.

Article 183, paragraph 1, letter t) of Legislative Decree 3 April 2006, n. 152 gives a definition of “recovery”, i.e., any operation the main result of which is to enable waste to play an appropriate role by the substitution of other materials which would have been used to carry out a specific function or to prepare them to carry out that function.

Regarding the distinguishing features of EoW, pursuant to Article 184 ter, paragraph 1, waste ceases to be waste when has undergone a process of recovery and meets certain criteria. Paragraph 2 establishes that recovery may simply consist of checking waste to verify whether they meet the criteria developed in accordance with the aforementioned requirements. Moreover, in accordance with paragraph 3 of the same provision, pending the adoption of one or more decrees referred to in paragraph 2, the decrees of the Minister of the Environment and of the protection of the territory of 1998, 2002 and 2005 and the law-decree 6 November 2008, n. 172 are still applicable.

## VI. CONCLUSION

From what has been discussed above it is clear that European rules on EoW are not fully harmonized; as a consequence, there are legal challenges. The longer-term target must be to achieve full consistency between the laws regarding waste and chemicals policies. In this way, materials will be safe, fit-for-purpose and designed for durability and recyclability; furthermore, they will have a low environmental impact. Goods should be designed, manufactured, traded and recycled with minimal use of hazardous substances in order to make their reuse easier; the aim is to widen the benefits and utility of goods, but also keeping a high degree of human health and environmental protection.

Implementing the Circular Economy Action Plan has made the transition towards a circular economy in Europe faster. At the same time, a stronger, shared vision of a circular economy can only boost ongoing efforts to modernise the EU industrial base to ensure its global competitive edge and preserve and restore the EU's natural capital.

## REFERENCES

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- [2] 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' (OJ L 354, 28.12.2013, p. 171).
- [3] Communication from the commission to the European parliament and the council COM(2008) 699 and COM(2014)297
- [4] Article 11(2) of Directive 2008/98/EC sets down a 50% target for preparing for the re-use and recycling of household and similar waste and a 70% target for preparing for re-use, recycling and other material recovery of non-hazardous construction and demolition waste by 2020
- [5] OJ, 14.6.2018, L 150, p 93, 100, 109,141
- [6] Early warning report COM (2018)656 final
- [7] See Eurometaux: <https://www.eurometaux.eu/media/1634/eurometaux-response-chemicals-products-waste-interface-stakeholder-c.pdf>
- [8] Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work.