PlasticsEurope
Association of Plastics Manufacturers

View Paper

Towards a life cycle driven Circular Economy

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The unique characteristics of plastics allow them to make a strong contribution to a more environmentally sustainable and resource efficient Europe. Lightweight, versatile and durable plastics contribute to energy and resource savings in strategic sectors such as retail, building & construction, healthcare, automotive and renewable energy, to name but a few.

Turning into a Resource Efficient and Competitive Europe should be what we are striving for. The Circular Economy is one of the means of reaching this overarching objective. Choices should be sustainable and rather than considering resource efficiency aspects at the end of life of a product only, the entire life cycle should be taken into account so that decisions truly help towards reaching this goal.

While the need for supplementing or updating EU waste legislation is recognised, this should be done keeping in mind that existing EU environmental legislation still lacks proper implementation and enforcement at Member State level. Nevertheless, making full use of waste which can be used as a resource should be a priority for the next decade and would make both environmental and economic sense. Indeed, landfilling remains the cheapest waste management option in many Member States and unless materials are diverted from landfill through legislative measures, this will remain the preferred waste management option for many of them.

Coupled with this is the lack of appropriate waste management infrastructure and the fact that there are technical and economic limits to current waste recycling. While product design undeniably has an impact on resource use and waste, there is a danger that by focusing on the recyclability of a product only, the resource efficiency benefits that would be provided by a more complex design solution would be lost.

In order to support the overarching goal of resource efficiency, with regards to the EU Review of Waste Targets, PlasticsEurope therefore calls on the institutions to:

1. **Better implement and enforce existing EU waste legislation**
2. **Ban the landfilling of recyclable and other recoverable post-consumer waste by 2025**
3. **Consolidate waste data reporting and make it comparable**
4. **Collect bio-waste and dry recyclable waste separately by 2020**
5. **Set plastic packaging recycling targets at an optimum level**

6. **Set post 2020 recycling targets based on country specific achievements according to a single calculation methodology**

7. **Make efficient energy-from-waste part of the Energy Union**

8. **Secure that the proximity principle is not a hurdle to efficient waste management in the EU**

9. **Ensure that the Circular Economy concept considers Europe's position in a globalized world**

10. **Broaden waste prevention to include resource savings across the lifecycle**

11. **Stimulate innovation in plastics recycling technologies**

12. **Establish minimum requirements for Extended Producer Responsibility**

13. **Keep the waste hierarchy flexible in order to allow the most sustainable outcome overall**

With regards to the Action Plan on a Circular Economy :

1. **Recognise resource efficiency achievements attained in the production of plastics**
2. **Ensure that Eco-Design requirements are based on the entire lifecycle**
3. **Ensure that legislation governing the legal status of products derived from plastic waste is effective and consistently applied**
4. **Ensure coherence across legislation dealing with waste and chemicals**

I. Recommendations for the Review of EU Waste Targets

1. Better implement and enforce EU waste legislation

Ensuring full implementation of existing EU waste legislation has the potential to increase recycling, overall recovery rates and growth and to create jobs in Europe. Before proposing new legislation in areas which are already covered by existing legislation, priority should be given to improving measures which support proper implementation and enforcement of existing laws. This is particularly true for EU waste legislation, the implementation of which remains largely insufficient and heterogenic across Europe and which would in itself already create a considerable number of new jobs. Better implementation could include an early warning system to anticipate Member States' difficulties in achieving the targets and to advise and help them progress in the right direction. Additionally, a standardised, uniform statistical monitoring system for all EU Member States is required in order to establish a level playing field in measuring compliance with key targets.

2. Ban the landfilling of recyclable and other recoverable post-consumer waste by 2025

Only a legally binding and enforced European landfill ban on recyclable and other recoverable post-consumer waste provides the certainty required for investments in the necessary waste infrastructure and would lead to significant resource efficiency gains as well as stimulate jobs and growth in the waste management sector. While a ban on the landfilling of *recyclable* waste by 2025 was already included in the Commission's July 2014 proposal, we believe that such a ban should also apply to *other recoverable* post-consumer waste, i.e. waste which cannot be sustainably recycled but can instead be used as a resource for energy production. In recent years we have seen a significant reduction in the amount of post-consumer plastics being landfilled in Europe, mainly because of national landfill restrictions: between 2006 and 2012, the amount was reduced by 26% to 9.6 million tonnes. As a result, post-consumer plastics recycling rose by as much as 40% and energy recovery increased by 27%.

According to a recent impact assessment carried out by PlasticsEurope on post-consumer waste streams containing plastic waste, diverting plastic waste from landfill by 2025 would lead to an annual additional amount of over 5 Mt of plastic recycling. The remaining plastic waste which cannot be sustainably recycled at this stage together with other associated recoverable waste could generate around 330 TWh of energy annually or roughly 23% of Europe's gas imports from Russia. It would also create close to 300,000 additional jobs related to waste sorting, plastics recycling and energy recovery plants, with, in total, roughly 3.5 billion Euro in wages.

3. Consolidate waste data reporting and make it comparable

Adopting a single method for the calculation of municipal waste recycling rates will facilitate an accurate overview of national achievements, allowing meaningful comparisons between Member States, establishing a level-playing-field for all actors on the market and, importantly, enabling policy-makers to set realistic targets for the coming years. Indeed, there are currently four methods for calculating rates achieved for municipal waste recycling; in view of the above, the amount of municipal waste recycled should only be equal to the amount recycled over the amount of municipal waste generated.

When it comes to the measurement point at which recycling performance is calculated, it should be restricted to the "*input waste used in […] the final recycling or other final material recovery process after prior sorting operations have been completed*". This would be in line with the first alternative of Commission Decisions 2011/753/EU and 2005/270/EC. An "output"-based approach would, on the other hand, lead to a rise in the quantities of lower quality plastic recyclates and would significantly increase monitoring costs for plastics recyclers.

4. Collect bio-waste and dry recyclable waste separately by 2020

The way that the collection of recyclable and other recoverable waste is carried out strongly determines the efficiency (quality, costs, etc.) of its further recycling and energy recovery, and thus the possibility to realistically divert it from landfills. Currently available modern sorting technologies can easily sort mixed dry recyclable materials and we therefore encourage the use of separate collection for dry recyclables. We also promote the mandatory separate collection of bio-waste for subsequent recovery.

5. Set plastic packaging recycling targets at an optimum level

The amount of plastics that can be recycled has increased over the last decades due to improved collection systems, more efficient identification and sorting technology, as well as an increase in consumer awareness thanks to ongoing campaigns. Today's recycling technology ("mechanical recycling") works well for products which can easily be collected and sorted, e.g. commercial film and rigid packaging, PET and HDPE bottles. While future technologies will

further increase this potential, plastics recycling today has limitations due to its economic and environmental impacts.

According to a recent study ("Criteria for eco-efficient plastic recycling and waste management", denkstatt, 2014), the optimum level for plastic packaging recycling, using currently available technology, lies between 35% and 53%. The figure also depends on a variety of country-specific factors, including the quality of the collection and sorting systems in place, available recycling and energy-from-waste capacities and the level of know-how of the waste operators. Increasing the recycling rate of plastics packaging beyond this optimum would result either in higher costs for society – costs, which are not necessarily compensated by environmental benefits - or in low quality recycling with no environmental benefit.

Bringing all 28 EU Member States to the current level of plastic packaging recycling of the best performing larger Member State by 2020 (around 45% applying "input" as measurement point) would be an ambitious but realistic goal.

6. Set post 2020 recycling targets based on country specific achievements according to a single calculation methodology

Before proposing an increase in recycling targets, e.g. for plastic packaging for 2025 or beyond, the European Commission should assess the achievements made by 2020, adjusting the rates to the single calculation method and using input into the recycling process as the only measurement point. Only such an approach will enable policy-makers to set realistic targets for the future.

Furthermore, in order to better reflect the different situations in the Member States once their rates have been adjusted according to the single calculation method and measurement point, targets should be set, taking into consideration what has been achieved by each country so far. The idea of setting EU recycling targets has not led to a level playing field over the years, since, on the one hand these targets were easily achievable for the most advanced countries, which often subsequently set higher national targets (so-called "gold plating"), and on the other hand hardly achievable and therefore unrealistic for many other countries, e.g. the 50% recycling target for municipal waste by 2020, a figure which will not be achieved by a large number of Member States. Therefore, in order to have realistic targets which would better provide the legal certainty required for investments in waste management infrastructure in Europe, country-specific achievements, according to a single methodology, need to form the basis of any post-2020 target.

7. Make efficient energy-from-waste part of the Energy Union

In order to make the phase-out of landfilling a reality, the waste hierarchy should remain flexible so that the most sustainable treatment option, including efficient energy-from-waste, is available for each type of waste. Using plastics as a secondary source of energy when they cannot be recycled eco-efficiently will expand the diversity of the EU's energy supply, improve energy security, and help mitigate climate change while saving fossil fuels. Energy-from-waste should therefore be acknowledged as having a role to play in the EU's energy and resource efficiency strategies and its potential should be acknowledged in the upcoming Commission Communication on Energy-from-Waste. In light of this, the Commission should also support Member States' efforts to overcome the sometimes negative public perception of this alternative route.

8. Secure that the proximity principle is not a hurdle to efficient waste management in the EU

Once a ban on the landfilling of recyclable and other recoverable post-consumer waste is in force, the proximity principle should be applied only when appropriate. Indeed, when changing perspective and looking at waste as a valuable resource, the rules of the market should apply instead, i.e. waste should be processed wherever this can be done in the most eco-efficient

manner. A so-called “Schengen area for waste” would help to overcome the lack of infrastructure in some EU Member States and overcapacity in others.

9. Ensure that the Circular Economy concept considers Europe’s position within a globalised world

Europe is an integral part of the global economy. In a globalised market, not only products, but also wastes are traded across borders. Waste is traded for various reasons including, but not limited to, the fact that there is a strong demand from third countries, in particular from Asia, that the prices paid for waste are therefore higher and that labour costs are generally lower in these countries. While further assessment of existing barriers to recycling in Europe is needed, waste which is legally exported to third countries and then recycled in an environmentally sound manner can make an important contribution to a global circular economy. However, such waste should only be traded through properly controlled commercial channels and recycling taking place outside the EU should only count towards European recycling targets if certified facilities operating to quality, environmental and safety standards equivalent to those in the EU are used. Such a certification will help secure a level playing field between the EU and other regions of the world, bearing in mind that this is not only a global economy which we live in, but a global environment as well.

10. Broaden waste prevention to include resource savings across the life cycle

Waste prevention is key to becoming more resource efficient. It should, however, be considered in a holistic way, taking into account not only the waste prevented at the end of life but also the waste prevented during the product’s life cycle. The reduction in material use in packaging and automotive or the increased durability of applications in the building and construction sector are examples of benefits which plastics can bring to waste prevention. Increasing the shelf life of fresh food and significantly reducing water wastage thanks to better performing pipes are two other examples of waste prevention during the use-phase. Examples which are all the more important when considering the amount of resources used in order to produce the food as well as the food and water scarcity in many parts of the world.

11. Stimulate innovation in plastics recycling technologies

In addition to improvements needed in the area of waste collection and sorting, innovation in recycling technologies is needed to further increase the potential of plastics recycling. Past experience in feedstock recycling has shown that technologies in that field have until now faced economic challenges preventing their development at an industrial stage, and further innovation and funding is needed in order to make feedstock recycling economically viable. Turning plastics back into their basic chemical building blocks through gasification, pyrolysis or depolymerisation processes, which can then be used for the production of new polymers or other chemicals, can be seen as one of the means of achieving a circular economy. It would enable, such as is the case for other materials like glass, paper and metal, the reintroduction of plastic waste in the production of virgin material so that one can continue to reap the benefits which conventional plastics currently provide. Last, but not least, additional funding for research in the use of CO_2 as a potential chemical feedstock will offer additional innovative opportunities to close the carbon cycle. This has the potential to reduce environmental emissions, reduce reliance on finite resources and limit the use of arable land for the production of carbon chemical feedstock.

12. Establish minimum requirements for Extended Producer Responsibility (EPR)

Minimum requirements for EPR should be set at EU level in order to ensure a level playing field among all EPR models. Such minimum requirements will help to achieve existing and future EU targets and will help to increase the share of secondary raw materials available to a sustainable Circular Economy. Such requirements should be accompanied by EU Guidance on

the roles and responsibilities of all actors currently involved in implementing EPR so as to ensure that everyone is accountable for their part in waste management.

13. Keep the Waste hierarchy flexible in order to allow the most sustainable outcome overall

While it is important to incentivise recycling as the preferred solution according to the waste hierarchy, it is equally important not to discourage or penalise energy recovery as an alternative to landfilling when recycling is not the most sustainable option. It is important to keep in mind that the waste hierarchy established under the Waste Framework Directive provides a certain flexibility in order to obtain the most sustainable result overall. This principle was also reflected in the Green Paper on Plastic Waste in the Environment which correctly acknowledged that "*under a life-cycle perspective, not all plastic waste may be suitable for recycling*". The aim should therefore be to enable relevant stakeholders in the waste management industry to make an informed decision as to whether it is more sustainable to recycle the plastic waste or to recover its embedded energy.

II. Recommendations for the Action Plan on a Circular Economy

1. Recognise resource efficiency achievements attained in the production of plastics

The chemical and plastics industry has since long adopted the philosophy of "making more with less" which means that they are turning less raw materials into more products. For example, consider the progress made with regard to the production of the plastic polypropylene; while this production process was generating 16% material losses in 1964, such losses were reduced to only 3% in 1988 and most recently to 0.3%, thus reaching the current efficiency limit.

The chemical industry's integrated system is a key tool when it comes to using resources as efficiently as possible in production, reducing losses to a bare minimum. Chemical companies generally do not manufacture their products in isolated plants, but instead, a variety of facilities work together in a network. After all, chemical reactions often create not only a desired product but also substances and heat which can be reused in other production processes. Nevertheless, the plastic industry is continuously looking into ways to improve their resource efficiency performance even further.

2. Ensure that Eco-Design requirements are based on the entire lifecycle

Eco-design is the integration of environmental aspects into product design with the aim of improving the environmental performance of the product throughout its whole life cycle. Indeed, it would be counterproductive to focus on improving one impact point, e.g. the end-of-life, if doing so would be detrimental to the benefits a product offers during the use phase, and that this combination would result in the product being less environmentally friendly when considering its whole life cycle. Improvement in the environmental impact of a particular phase should therefore not be implemented without first verifying that the overall environmental impact is indeed positively affected.

a) Using recycled material should remain a market choice

Imposing the use of recycled content in a product would not always be environmentally beneficial, economically viable and technically feasible, and due account also needs to be taken of product safety rules and consumer health. The possibility to use recycled material varies greatly from one application to another and it is therefore impossible to have a general rule imposing a defined level of recycled content. It should be left up to each industry to decide, on a case-by-case basis, whether or not it is technically feasible to include a percentage of recycled material in its products and whether it makes both environmental and economic sense.

b) Resource efficiency gains should not be jeopardized by over-emphasising recyclability

Designing a product with the sole aim of improving its waste phase, for example, by making it recyclable, could negatively affect the resource efficiency benefits which it provides during the use phase, and thereby result in an overall negative environmental effect. For example, *Parmigiano* cheese, an expensive and 'sensitive' product, is packed in a film with high barrier properties, consisting of seven layers of different plastics. If such a complex packaging solution was not available, food producers would have had to use far more material to provide an adequate level of protection. For instance, had there only been one type of plastic available, its packaging would have had to be at least twice as thick and the shelf-life of the cheese would have been much shorter. When it comes to packaging, the Essential Requirements in the Packaging & Packaging Waste Directive as well as the respective CEN standards already secure that waste aspects are considered during the design phase.

c) Apply a risk-based approach when dealing with hazardous substances and recycling

Restrictions on the use of certain hazardous substances, in order to improve recyclability, should be considered with caution. The recyclability of a product is not defined by its chemical composition and the content of hazardous substances, but by the associated risk that these substances are likely to pose to the worker during the recycling and conversion process and to the user of the final product containing the recycled material. Using hazardous substances in a product does not per se make the waste hazardous and the final recycled product unsafe. For instance, although lead-based stabilizers are classified as hazardous, PVC windows containing lead-stabilizers does not pose any health issue to the user, and using such materials will not cause harm during the recycling process or in the new application since the lead is embedded in the polymer matrix and therefore does not leach out.

All measures that could be proposed to promote eco-design, in particular those targeting a higher use of recycled material, should be based on the above considerations.

3. Ensure that legislation governing the legal status of products derived from plastic waste is effective and consistently applied

Mechanical recycling is a well-established means of recovering valuable plastic waste streams and contributes to resource efficiency. In order not to impede the existing recycling industry and maintain a level playing field across EU Member States, legislation governing the legal status of products derived from plastic waste (secondary raw materials), should clearly focus on the legal requirements, be unambiguous and consistently applied throughout the EU.

4. Ensure coherence across legislation dealing with waste and chemicals

Recycling and the health and safety of workers and consumers need to be jointly considered. For this reason, it is crucial that recycled materials are put on the market under equivalent regulatory conditions as virgin materials. In order not to jeopardise consumer health and safety, it must be mandatory for substances contained in recyclates which are placed on the market as products, to comply with REACH, as is required for substances used in virgin materials. In this respect, regulators should strive to ensure compatibility between REACH and recycling.