EU strategy for plastics: how to enable the transition to a circular economy

POSITION PAPER

Executive summary

The American Chamber of Commerce to the European Union (AmCham EU) welcomes the European Commission's launch of the work on the strategy for plastics. The Commission's roadmap presented in January 2017 rightly identifies many of the challenges and opportunities in the re-use and recycling of plastics in Europe. Technology neutrality, sectoral approach and clear, science-based definitions will be paramount to success. Product requirements vary from one sector to another and manufacturers should retain the ability to choose the best materials. To fully reflect the benefits that plastics bring to society, the Commission should consider all stages of a product's life, with a particular focus on the use phase.

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AmCham EU speaks for American companies committed to Europe on trade, investment and competitiveness issues. It aims to ensure a growth-orientated business and investment climate in Europe. AmCham EU facilitates the resolution of transatlantic issues that impact business and plays a role in creating better understanding of EU and US positions on business matters. Aggregate US investment in Europe totalled more than €2 trillion in 2016, directly supports more than 4.5 million jobs in Europe, and generates billions of euros annually in income, trade and research and development.

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Introduction

The circular economy will bring tremendous benefits to consumers, business and society as a whole. Members of the American Chamber of Commerce to the European Union (AmCham EU) support its principles and objectives but understand that moving from a linear to a circular economy is a colossal enterprise for everyone involved as it impacts all sectors and aspects of our economy. In this sense, industry has championed cost-effective and resource-efficient solutions with a proven track record of innovative developments.

Going forward, this transition requires profound political, economic and psychological changes in our society, and the involvement of all stakeholders is necessary for its success. The strategy for plastics the Commission will launch is an opportunity to show concrete progress towards a circular economy that delivers concrete results.

The January 2017 Commission's roadmap rightly identifies many of the challenges and opportunities in the re-use and recycling of plastics in Europe. Plastics are unique in both the challenges they present and the benefits they offer in terms of societal well-being and the attainment of an innovative, resource-efficient circular economy. For example, they reduce CO_2 emissions due to their low weight and/or insulating properties, minimise food waste by increasing the shelf life of food ranging from sirloin steaks to cucumbers[1], and increase safety by providing electrical insulation.

The upcoming strategy on plastics can provide clarity on the role plastics can play in the transition to a circular economy. An important first step in this process is identifying areas that deserve further consideration and should be clarified. Based on its experience with product policies over the past 20 years, AmCham EU recommends that the Commission's work aim at tackling the following aspects:

- Recognising the positive benefits of modern plastics and facilitating further innovation in this field;
- Devising a holistic approach for plastic products and packaging, highlighting their functionality especially during the use phase, while also considering their differences and their impact throughout all stages of their lifecycle (production, use and waste);
- Creating a market for secondary raw materials, based on a level playing field with virgin materials;
- Implementing a circular economy, with a firm focus on overall resource efficiency and holistic thinking.

[1] Denkstatt. "How Packaging Contributes to Food Waste Prevention." Accessed May 29, 2017. http://denkstatt.at/files/How_Packaging_Contributes_to_Food_Waste_Prevention_V1.2.pdf.

Plastics as a key enabler of the circular economy and EU's low carbon economy objectives

AmCham EU recognises the efforts made by the Commission to assess the capabilities of environmental footprint methodologies. However, there is a clear need to better understand both the limitations and the potential of these methodologies. It is crucial to ensure a balanced approach between the different life stages (production, use and waste) when making a final assessment. Particularly for plastics, the use phase cannot be overshadowed by the production and end-of-life stages. The use phase can, in fact, offer significant environmental benefits:

- *Resource efficiency*. Substituting the 14.4 million metric tons of plastic packaging in the US would require more than 64 million metric tons of other types of packaging, such as steel, aluminium, glass, and paper, so over four times as much as plastics[2].

- *Food waste.* Plastic packages protect and preserve food products, increasing their shelf life and reducing food waste. An Austrian study[3] has shown that in the case of sliced cheese, food waste is reduced from 5% to 0.14% when the cheese is sold with plastic packaging instead of being sold at the counter with paper packaging. Benefits of prevented food waste are usually much higher than environmental impacts of production or optimisation of the packaging involved, which reinforces the case for looking at all phases of the lifecycle.

- *Air quality.* The 'light-weighting' of cars with advanced polymers significantly reduces fuel consumption and hence reduces emissions of CO_2. Every 10% of vehicle weight reduction results in about a 7% gain in fuel economy.[4]

- *Energy efficiency.* Substituting plastic packaging with alternatives like glass, aluminium, steel or paper results in energy demand increasing by a factor of 2.2 (1,240 million GJ) which is equivalent to 20 million heated homes[5].

The diversity of plastic materials calls for a sectoral approach

When preparing the strategy on plastics, the Commission should take into account the different types of plastics and their various functionalities. Consequently, a one-size-fits-all solution would be

[2] Franklin Associates. "Impact of plastics packaging on life cycle energy consumption & greenhouse gas emission in the United States and Canada – Substitution Analysis." Accessed May 29, 2017. https://plastics.americanchemistry.com/education-resources/life-cycle-assessment-study/executive-summary-impact-of-plastics-packaging-on-life-cycle-energy-consumption.pdf.
[3] Denkstatt
[4] *U.S. Department of Energy, 2001; National Institute of Standards and Technology, 2008.
[5] Brandt, Bernd , and Harald Pilz. "The impact of plastic packaging on life cycle energy consumption and greenhouse gas emissions in Europ." Accessed May 29, 2017. http://www.plasticseurope.org/documents/document/20111107113205-e_ghg_packaging_denkstatt_vers_1_1.pdf.

detrimental - AmCham EU supports a sectoral approach which would be an important catalyst to further promote plastics in the circular economy.

The strategy on plastics needs to remain technology neutral. This will allow the industry to decide which materials to use depending on the specific product needs and the end-use quality requirements. For instance, requirements for food packaging differ from those in construction. Moreover, a technology neutral approach, where legislation does not pre-empt technology developments, would create space for material innovation.

The strategy on plastics should allow manufacturers to decide on the best materials to use based on products' functionalities which vary widely from one sector to another, but also on consumers' demand. Companies consider the impact of the material throughout all stages of its lifecycle (production, use and waste) on the use of natural resources and various environmental variables. For instance, bio-based plastics may reduce the use of fossil feedstock but can also have a negative impact on water consumption while some of their performance characteristics can be inferior to other plastics. When considering using bio-degradable plastics, which are not bio-benign[6], a producer needs to look at such factors as:

- It is 90% degradable but only in controlled conditions;
- For waste management, separation from non-biodegradable waste streams is needed;
- Public perception may lead to an increase in littering.

Clear and widely-accepted definitions will allow for an innovative and efficient strategy

The EU legislation does not yet clearly define terms related to plastics. The waste proposals currently under negotiations is likely to spell out some of the overarching definitions. However, the Commission will need to formalise concepts such as 'recyclability' or 'microplastics' and in doing so, it should regularly consult with industry stakeholders and the scientific community to ensure definitions are science-based, workable, relevant and build on existing experience.

AmCham EU believes that clearly laying down definitions related to plastic within the plastics strategy will allow the Commission to propose dedicated objectives and frameworks addressing the various challenges that plastics pose while capitalising on their unique properties.

Therefore, AmCham EU calls on the Commission to build on existing scientifically-based and industry-endorsed definitions where feasible. Mirroring existing international regulations would also ensure consistency at the global level. These definitions should include:

- *Plastic*: Synthetic water insoluble polymers that are repeatedly moulded, extruded or physically manipulated into various, solid forms which retain their defined shapes in their intended applications during their use and disposal.

[6]UNEP (2015) "Biodegradable plastics & marine litter: Misconceptions, concerns and impacts on marine environments.". UNEP (2016) "Marine plastic debris and microplastics – Global lessons and research to inspire action and guide policy change"

- *Microplastic:* Any 5 mm or less, water insoluble, solid plastic particle that could be found as marine litter. *Primary microplastics* are intentionally added to products while *secondary microplastics* originate from the fragmentation of larger plastic items by use, waste management or in the environment.
- *Plastic microbead:* Any intentionally added, 5 mm or less, water insoluble, solid plastic particle used to exfoliate or cleanse in rinse-off personal care products. Plastic microbeads are a type of primary microplastic.

The legislation should also recognise the difference between polymers and plastics, which is particularly relevant when it comes to marine litter. While all plastics are polymers, not all polymers are plastics. A polymer is a large molecule made up of repeating sequences of smaller molecules. While many polymers have been developed by mankind to perform a wide variety of functions that are central to modern living, many exist in nature – e.g. our DNA, proteins, sugars, fats, carbohydrates etc. Plastics are but one example of solid, man-made materials consisting of polymers. The correct terminology should be used to avoid confusion or disproportionate regulatory measures that do not lead to any real benefit to the environment.

Innovation and investments will be key to increase the uptake of recycled plastics and to develop a true market for secondary raw materials

Product quality and product safety are crucial criteria when choosing appropriate materials

When choosing the appropriate material for their products, manufacturers take many variables into account. Product functionality and safety, price, quality and availability of the raw material, consumer preferences and demand are among the key elements they consider. Currently, recycled plastics are disadvantaged in some cases when making these assessments.

A concrete example is the use of secondary raw materials by the toy industry. It is technically and economically extremely challenging for a toy manufacturer to ensure that a toy using recycled materials meets all safety requirements laid down in the Toy Safety Directive, REACH, and other pieces of legislation, which are among the strictest in the world. Therefore, for safety reasons, reputable manufacturers generally do not use these materials. Recycling plastics can change the chemical composition and manufacturers need to make sure that the toy is consistently mechanically strong enough not to break and chemically safe so as not to present any risk of injuries to the child. These attributes contribute to good quality toys' long lifespan (more than 10 years on average), and consequently limits the amount of waste.

In the case of product safety, AmCham EU members believe essential that products, whether produced from virgin or recycled raw materials, be safe for their intended uses. Risk assessments conducted by various actors throughout the different phases of a product's life play a key role while compliance with existing legislation such as REACH, food contact, RoHS, WEEE is also required for recycled raw materials.

A true market for secondary raw materials needs appropriate incentives to be able to compete on a level playing field

AmCham EU members see a need for more support to develop a true market for secondary raw materials, able to compete with virgin materials on a level playing field.

Our experience has allowed us to draw the following conclusions about the uptake of recycled plastics:

- Pull mechanisms for recyclates such as imposed minimum post-consumer resin (PCR) content in packaging are not sufficient to create a market.
- Waste legislation focuses for the most part on quantities (weight based collection or recycling targets) and less on the qualities of recycled materials.
- Administrative barriers caused by fragmented legislation, information gaps and lack of clear definitions prevent secondary feedstock from competing with virgin materials.
- The export of waste to developing countries, where very often it is processed below the EU standards, hinders local optimal recycling investments.

Some of these points have already been illustrated in AmCham EU's publication 'Circular economy: 10 innovative business solutions and how to go further'. The IT sector has made a lot of efforts to recycle plastic components. Functioning products are no longer broken into pieces, plastics are sorted, cleaned, and used again in a new product. This 'closed loop' recycling means that plastics are collected in a return system and processed for use in a new product. However various obstacles continue to hinder this process, including national differences in requirements for transboundary shipments; requirements for repair facilities; diverging methodologies to calculate waste targets; and differences in calculation methodologies. Therefore, harmonising these requirements at the EU level is critical.

Incentives for investments in early stage R&D projects could also address the challenges of using recyclates and identify a broader range of value-adding end-use applications for recycled plastics. Further support could also come from financing, for instance through the European Fund for Strategic Investment (EFSI). Together with a new framework created by the strategy on plastics, this should unlock funds for upgrading of the waste management systems.

Furthermore, to meet growing demand for high quality recyclates from different types of plastics, AmCham EU members support sorting innovation. As illustrated above, quality is often an obstacle to the uptake of secondary raw materials and better, more advanced sorting technology will lead to material flows of higher quality.

Plastics' leakage into the environment is a shared responsibility

Plastics' leakage into the environment is an important global issue, not only for the environment but also for companies whose resources go to waste. This leakage is caused mainly by improper handling

of products and waste. Therefore, it should be primarily resolved through the current legislative proposals on waste. The defined roles and shared responsibilities of producers, municipalities and consumers should be clarified, and need to be proportionate.

Policies aiming at tackling marine litter and leakage into the environment should encourage:

- the development of efficient waste management systems, including effective infrastructures for collection and sorting of waste or waste water treatment plants with stronger retention rates;
- the design of products that takes into account resource efficiency and litter into consideration;
- the importance of awareness raising: the wider issue of littering – which is the primary route by which plastics leak into the environment – should be addressed through awareness raising and education. As no product or package is produced to be littered, littering is mainly a consequence of negligent and/or illegal behaviour by citizens. Appropriate consumer education programmes would be best placed to address this issue.

Business supports many global initiatives paving the way to plastics leakage solutions

Several initiatives exist, led by business and other actors, to tackle leakage into the environment, from production, waste, and consumer awareness perspective:

- **Operation Clean Sweep®** (OCS)[7], is a voluntary international programme designed to prevent resin pellet, flake, and powder loss and help keep this material out of the marine environment – both protecting the environment and saving valuable resources. Itis a good example of how plastics manufacturers and those in the supply chain are taking tangible action to reduce plastic leakage into the environment during the production phase.

- The **'Zero plastics to landfill' initiative** from Plastics Europe, representing the interests of the plastics manufacturing industry in Europe, tackles leakage in the waste phase. It aims at an EU-wide landfill ban of all recyclable and recoverable post-consumer plastic waste by 2025 and the establishment of recovery-oriented collection systems. The goal of this initiative is not only recycling but resource efficiency (including using plastic waste as a secondary source of energy) as recycling is not always the most eco-efficient waste management option.

- **Ocean Conservancy** is an environmental advocacy group gathering many different stakeholders active at global level that builds on science, collaboration and innovation to tackle the issue of marine litter of equally global nature. Their actions include collaborative pilot projects on research and waste management as well as support educational programs to promote recycling and prevent littering.

[7] https://opcleansweep.org/

Microplastics require a science-based and comprehensive approach

There are increasing concerns about the quantities of microplastic litter found in our marine environment and the harm that it could inflict to our eco-systems, including fish. While research in this area is still in its infancy[8], AmCham EU supports the need for further scientific work to ensure that EU and national law-making is proportionate and evidence-based.

To effectively contribute to the reduction of plastic marine litter, any measures should clearly lay out the scope and appropriate definitions. In particular, they should exclude ingredients which are not plastic, not toxic for our eco-systems, or simply not found in the marine environment. An unnecessarily large scope could be problematic for first-mover sectors and companies which have already voluntarily agreed to phase out certain types of microplastics. For smaller companies which do not operate in markets where such legislation is in place, it will be important to ensure they have enough time to reformulate products.

AmCham EU supports the Commission's objective to reduce the amount of plastic marine litter via a comprehensive approach which involves all actors along the supply chain. Measures improving the retention rates of waste water treatment plants to help prevent substances from reaching the marine environment should be considered, as this may well be the most efficient way of dealing with the overall problem of microplastics in the ocean.

The strategy should be consistent with EU circular economy actions

One objective of the upcoming strategy on plastics is to create a comprehensive framework for re-use and recycling of plastics. However, the direction given by the Commission should be in line and fully compatible with existing or upcoming legislation and initiatives.

Waste package – Recycling targets: Realistic and sustainable targets for recycling plastics in the currently reviewed waste legislation are needed. The legislators should agree on a sound common methodology to calculate their attainment, before the strategy on plastics is presented. This would ensure that all Member States account and report to the same rules. Targets should also enable and promote material innovation and thus waste legislation should remain technology neutral.

Communication on the interface between product, waste and chemicals legislation: Consistency is crucial, together with avoiding overlapping or contradictory requirements which could negatively impact EU chemicals safety regulation, and/or hinder the development of a circular economy. In this regard, the issue of communication through the supply chain is important. AmCham EU believes that REACH and CLP regulations should remain the overarching regulatory tools for chemicals contained in plastics, with product legislation and waste requirements being consistent with or building on REACH. In cases where these do not provide sufficient information to recyclers – e.g. because of loss

[8] A recent United Nations Environment Programme (UNEP) report on marine litter found it unlikely that microplastics may pose a threat to the development of fish stocks, or represent a risk to human health.

of information at the waste stage, in particular for consumer waste, because of uncontrolled contamination during use, collection and sorting phases, because of uncontrolled imports – the issue can be best overcome by bringing together all partners in the value and recycling chains in an optimal collaborative approach.

Communication on waste-to-energy: The strategy on plastics is linked to the recent Communication on waste-to-energy. AmCham EU members believe that incineration with energy recovery should be kept as a viable end of life solution for plastic waste, where this makes sense on a full life-cycle basis.

Conclusion and recommendations

The coming months will be an opportunity for the Commission to ensure that the existing legislation allows producers to use plastic materials that make the most sense economically and environmentally.

To this end, key priniciples should drive the Commission in its work:

- The strategy needs to consider the entire lifecycle of products and materials, including the use phase – fully reflecting the benefits that plastics bring to society. Holistic thinking and proper impact assessments will be crucial.
- Policy actions should:
    - consider sector specificities;
    - avoid market distortions;
    - ensure a level playing between material types, feedstocks and competitors;
    - be based upon sound science and risk management principles.
- The strategy needs to formalise concepts and clarify definitions related to plastics. Working with industry and the sceintific community, by adopting clear, science-based, workable definitions could facilitate the process of proposing dedicated actions addressing the various challenges the roadmap identifies.
- The roles and responsibilities of all actors along the supply chain should be clarified and proportional.
- The Commission should rely on the expertise and lessons learned from the existing multistakeholder initiatives. For example, the New Plastics Economy initiative led by the Ellen MacArthur Foundation in collaboration with a broad group of leading companies, cities, philanthropists, policymakers, academics, students, NGOs, and citizens aims to rethink and redesign the future of plastics, starting with packaging.
- There are different challenges in different value chains that have to be addressed individually. AmCham EU believes there is no one-fits-all solution. Consequently, we recommend the strategy remains technology neutral so that industry can decide which materials to use depending on specific product needs, while leaving space for innovation.

AmCham EU looks forward to continuing the dialogue on the strategy on plastics with the Commission services. We believe that our input can contribute to delivering a comprehensive and constructive policy framework for a diverse material such as plastics.