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 2018**, directly supports more than **4.8 million jobs in Europe**, and generates billions of euros annually in income, trade and research and development.

AmCham EU focuses on a number of key areas including environmental policy, led by its Environment Committee. The Environment Committee strives to promote a coherent, science-based and balanced approach to sustainable growth. It supports better regulation and facilitation of the transatlantic dialogue on environmental issues. The committee identifies, monitors, evaluates and influences European environmental policies as well as develops and strengthens communication with top-level decision-makers, often in cooperation with other business groups.

As an active industry stakeholder AmCham has participated and contributed to many environmental policy debates (from conception to implementation) in areas such as the circular economy, waste policy, single use plastics, micro-plastics, chemicals, and the interface between product policies. Many of these are touched upon in the roadmap, and so AmCham EU would like to share once more our positions, brochures and responses to various public consolations, including:

- AmCham EU position on the interface between chemicals, products and waste legislation (July, 2017)
- Amcham EU response to the public consultation on the interface between chemicals, products and waste legislation (October, 2018)
- Amcham EU Circular Economy Brochure (September, 2016)
- Amcham EU Circular Economy Brochure (February, 2020 launch)
- Amcham EU response to the ECHA waste database consultation (October, 2018)
- The joint statement of 68 packaging value chain associations on the SUP proposal (August 2018)

More information on the work of the Environment Committee, its publications and positions can be found here. More information on AmCham EU, and its agenda for the next four years can be found here.

AmCham EU
SPEAKING FOR AMERICAN BUSINESS IN EUROPE

Consultation response

AmCham EU Response to the European Commission's Targeted Consultation

Analysis of the interface between chemicals, products and waste legislation and identification of policy options

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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Executive summary

The concerns about the information on substances of very high concern (SVHC) and their presence in products and materials do not necessarily apply across all waste streams, but primarily to certain examples. To examine the situation related to SVHCs in recyclates, **we recommend the EU starts assessing high volume/high value recyclates, with well-characterised compositions, which are a priority for recycling within the EU**. The experience and best practices learned from these examples should also help improve the situation in less-advanced waste streams.

Although information sharing requirements currently exist in in EU legislation, in practice there is room for improvement in sharing information between manufacturers, appropriate players within the value chain and recyclers. **The development of sectoral collaborative industry platforms could help improve communication about the presence of SVHCs** in the individual market segments.

In alignment with the resource efficiency goals of the circular economy, policy should focus on permitting and increasing the reuse and recycling of materials, while maintaining high levels of safety and protection of the environment. Regulation should concentrate on ensuring a pragmatic, case-by-case and application-oriented approach to chemicals safety in the circular economy, based on safe for intended use and risk-management. **AmCham EU recommends that the Commission's approach should not focus on the simple presence of 'chemicals of concern', but rather the safe for-use management of recycled materials containing such substances**.

A level playing field between primary materials and those derived from recovered material should be ensured. Both should safeguard equally high levels of safety for their intended use through full compliance with REACH and other relevant existing legislation.

Current chemicals legislation does not require major revision – existing EU chemicals safety legislation (including for example REACH) remains broadly appropriate and should be maintained as the underpinning legislative framework when materials are placed on the market. However, additional guidance and clarification on the application of REACH and other relevant legislation could help to inform decision making around recycling. Overlapping and misaligned waste, product and chemicals legislation should be avoided. A cohesive and pragmatic approach, focused on removing legislative barriers, should be adopted to fully realise circular economy objectives. Legal certainty is needed in relation to the interfaces between legislation, and certain definitions and procedures falling under its scope. All of the above will ensure circular economy goals are maximised.

AmCham EU believes that the Commission's efforts to analyse and clarify the interface between chemicals, waste and product legislation can help to streamline and improve the operation of the current framework. **The successful implementation of the circular economy – with all the benefits that it can bring to the environment, society and businesses – will rely on pragmatic and fit-for-purpose regulation in this area.**

Introduction

The American Chamber of Commerce to the European Union (AmCham EU) represents US companies operating and investing in Europe and is committed to making Europe more competitive in the global marketplace. The membership of AmCham EU encompasses wide-ranging industrial sectors and many member companies have, or are implementing, dynamic business models and practices in line with the goals of the circular economy.

AmCham EU fully supports the circular economy objectives to increase reuse, recycling, and resource efficiency on the basis of life-cycle thinking, bearing in mind that recycling and reuse itself should not be an environmental target per se, but rather a tool to improve the resource efficiency of certain raw materials. For industry and policymakers alike, fully safeguarding the safety of consumers and workers, while protecting the environment is an essential precondition to a successful circular economy.

An effective, clear and consistent EU legislative framework covering chemical, product and waste legislation will be the cornerstone of a successful transition to the circular economy in Europe. AmCham EU welcomes the Commission's analysis of the interface between these three pieces of legislation, as a means to help improve the suitability, coherence and alignment across the existing legislative frameworks.

AmCham EU would like to share its feedback on the four issues identified by the Commission, as well as on other relevant considerations. As a preamble, we noted the references made in the Commission's consultation document to 'substances of concern'. However, we believe the use of this vague and undefined terminology lacks clarity and could create confusion. Therefore, AmCham EU recommends to only make reference to 'substances of very high concern' (SVHCs) which has a clearly defined meaning and scope within the existing EU legislative framework.

Insufficient information about substances of very high concern in products and waste

For an efficient and safe circular economy, as provided for under existing legislation, it is important that information about the presence of SVHCs be communicated from manufacturers to the appropriate players in the supply chain, such as waste treatment operators and recyclers.

Materials producers in the EU are required to communicate the presence of hazardous substances, including SVHCs, above a certain threshold to downstream users via safety data sheets. Final product producers and importers in the EU are required to communicate the presence of SVHCs under Article 33 of the REACH regulation. Sector specific product waste legislation (e.g. WEEE) also provides information about preparation for re-use and treatment for the products placed on the market to recyclers and re-use organisations, to enable these products to be recycled at their end-of-life.

Nevertheless, it is acknowledged that in practice, and despite these provisions in EU legislation, possible gaps may exist, particularly for waste streams which end up in bulk and where the presence of SVHCs may vary for each recyclate batch. It is not necessarily the case that comprehensive information will be easily and readily available to all waste holders including recyclers.

However, **for a large number of recycled waste streams, where the origin and composition of the materials are well known, the potential presence of SVHCs is not an issue**. The issue primarily concerns waste streams where:

- the origin and composition is ill-defined, or
- the material has been used in long duration applications and contains substances which were not regulated when first introduced to the market, but subsequently for which regulatory measures or restrictions have been put in place – i.e. legacy substances.

In addition, any lack of compliance with EU legislation for products made outside of the Union, but which are imported and become waste within Europe, could lead to the unidentified presence of SVHCs in products and their waste streams. Addressing this problem effectively will require the EU and its Member States to step up enforcement efforts, which will also be critical when it comes to eventual REACH restrictions for finished articles, including Annex XIV substances after their sunset dates.

These factors imply that **tackling the issues of insufficient information on SVHCs in products and waste should start by focusing on specific waste streams,** where the issue is of most relevance.

One way to help close gaps in information flow could be **for recyclers to better identify and assess the products they wish to place on the market, as well as their intended applications**. This would allow recyclers to place products on the market for specific uses, in full compliance with REACH and other EU chemicals safety legislation. REACH is clear in stating that the obligation for compliance falls upon the actor who places or uses substances, or articles containing specific substances, on the EU market. This obligation therefore does, and should, apply to recyclers putting secondary raw materials on the EU market.

However, the reality behind this legal principle is complex and may lead to implementation problems. Most of the EU recycling sector today is made up of SMEs who will unlikely have the necessary staff, knowledge and resources to meet REACH registration requirements. Recyclers may need help complying with REACH to ensure that information requirements on the content of SVHCs will be met, and to build the trust of European consumers with respect to recycled materials. Transparency will only be achieved if all appropriate actors in the value chain play their part.

In addition, **the development of information sharing platforms between appropriate players in the value chain, including producers and recyclers, could be established**. This is particularly relevant for specific waste streams, particularly well-organised and/or with high volumes. Such mechanisms may allow for the sharing of information on the presence of SVHCs. Several practical examples[1] already exist to install this type of voluntary information sharing, which in some cases can be effectively facilitated by sectoral associations.

[1] E.g. the SDSR (safety data sheet for recyclates) tool; GADSL (Global Automotive Declarable Substance List); EUCertPlast; the electronics sector IEC 62474 database; and the collaborative value chain initiative of VinylPlus.

Presence of SVHCs in recycled materials (and in articles made thereof, including imported articles)

With regards to recycling, chemicals safety, and the presence of SVHCs, AmCham EU believes that several **guiding principles** should guide the Commission's work:

- A **level playing field** between those manufacturing primary materials, and those producing recycled products from recovered material should be maintained. Both should ensure equally high levels of safety for their intended use through full compliance with REACH and other relevant existing legislation;
- **Current EU chemicals safety legislation** (comprising primarily REACH and CLP) remains appropriate and should be maintained as the **underpinning legislative framework** when materials are placed on the market;
- While maintaining the highest level of safety standards, the focus should be on ensuring a **pragmatic, case-by-case and application-oriented approach** to chemicals safety in the circular economy, based on safe for intended use and risk-management.

The presence of SVHCs should not necessarily preclude reuse or recycling. Where the recycling of materials containing SVHCs is possible, shows sustainability benefits based on lifecycle thinking, and can be done in a way which effectively manages any risk to human safety or the environment, this should be permitted in compliance with legislation. Overly conservative, prescriptive and/or hazard-based regulation could, in contradiction to circular economy goals, lead to the prevention of reuse or recycling, hamper innovation, and create higher levels of unnecessary landfill, incineration of materials or their treatment outside of the EU. In addition, one should bear in mind that the presence of hazardous substances is frequently needed to obtain the crucial functional properties of the materials.

The Commission's approach should not focus on the mere presence of 'chemicals of concern', but rather the safe-for-use management of recycled materials containing such substances. As such, a case-by-case socio-economic cost vs. benefit analyses should be utilised. Where recycled materials do not meet the high specifications of primary virgin materials, consideration should be given to the use of these materials in applications where a risk-management approach demonstrates safety in their intended use.

Restrictions in Annex XVII to REACH apply equally to the use of a virgin (new) material and recovered materials (e.g. restrictions for polycyclic aromatic hydrocarbons and for lead in articles for supply to the general public - entries 50 and 63, respectively, of Annex XVII). Certain restrictions, however, foresee a different treatment when the restricted substances are present in recovered materials. An example of this is a higher limit for the content of cadmium in recovered rigid PVC (0.1 %) versus that for virgin PVC (0.01 %). This specific situation is temporary and will be reviewed by December 2017. However, this demonstrates the **issues around alignment of the requirements for virgin materials, and those for secondary raw materials**, and the need for a level playing field between the two types of materials. Recycling with the retention of an SVHC in the polymer matrix, and where lack of migration is demonstrated, can be considered a valid exposure reduction measure in some cases.

Since separating the material can create potential risks during disposal, this is particularly relevant to metals such as cadmium and lead.

Further supporting guidance on the application of REACH and other existing legislation around the presence of, and information sharing on, SVHCs in articles and recycled materials may help to contribute to a greater integration of circular economy principles within the existing legislative framework. Also, it can help to clarify the application of EU regulation and the decision making for recycling in such situations.

Uncertainties about how materials can cease to be waste

End-of-Waste criteria are referred to in the Waste Framework Directive (WFD) but, in practice, policy initiatives and implementation are currently undertaken at national level. National measures applied to recycled materials often vary across member state, creating uncertainty, disparity and potentially distorting the internal market.

This is especially an issue for specialised, high value, B2B waste streams which have few treatment facilities in the EU, let alone in each member state, as the waste volumes they treat are low. Current national administrative burdens around waste shipment and permitting for travel across EU internal borders often do not allow economic actors to take advantage of the economies of scale necessary for a recycling or remanufacturing scheme to be economically viable. Issues around the definitions of waste, by-products and residues, plus barriers in waste and product legislation (e.g. lengthy procedures, various interpretations by local authorities) may also currently deter some by-products or waste streams from being further used or recycled.

The **definition of waste** under the Waste Framework Directive (WFD), under which 'waste' means any substance or object which the holder discards, or intends or is required to discard, relies upon the interpretation of the word 'discard'. The European Court of Justice has ruled that the term 'discard' cannot be interpreted restrictively. This leads to the widest possible interpretation, which in turn can act as a barrier to attaining circular economy objectives.

A possible option within a revised WFD could be to fully define the meaning of 'discard', as it applies to waste and potentially with respect to certain activities (such as in recycling). With appropriate safeguards, this could be constructed in such a way that only materials which exit the circularity loop and are 'disposed of' are considered to be discarded under the legislation. In this manner, the definition of waste would remain unchanged, but the intent of the definition in relation to implementing the circular economy (and recycling in particular) is clarified, potentially leading to a more efficient and unhindered flow of materials, vs. the current situation of a continually repeating cycle of waste/non-waste classification procedure.

Another approach could be one similar to that promoted within the End-of-Life Vehicle (ELV) Directive (2000/53/EC). The ELV Directive has proven highly effective in preventing waste disposal from vehicles, increasing re-use, recycling and recovery, as well as ensuring that ELVs are treated in an environmentally sound way. The current challenge within this legal framework is enforcement, which

is to this day still lacking to a certain extent. The automotive industry has been calling for better enforcement to create a level playing field in the ELV recycling business, as well as a mandatory registration and de-registration system that includes a compulsory certificate of destruction (CoD) to demonstrate proper ELV treatment and support monitoring. A similar de-registration system could be developed for other sectors and waste streams.

To ensure regulatory alignment, remove barriers, and further the development of the circular economy, **the definition and legal status of recycled materials should be clarified and applied in a consistent and coherent manner across all Member States**. We also encourage the European Commission and the Joint Research Centre to start investigating new EU level end-of-waste criteria. AmCham EU believes that even though the Commission has run into problems with very broadly defined end-of-waste criteria for municipal waste in the past, this should not prevent it from investigating more specialised B2B end-of-waste criteria in the near future, which would help recover valuable secondary materials.

Difficulties in the application of EU waste classification methodologies and impact on the recyclability of materials

Currently, waste is classified as hazardous or non-hazardous based on the entries in the European List of Waste (LoW), as defined by the recently amended Decision 2000/53/EC. However, for many waste streams, waste is also classified via the determination of its hazardous properties , according to the classification rules and substance concentration thresholds laid out in Annex III of the WFD, as amended by Commission Regulation (EU) 1357/20146. The rules in this Annex are aligned to a large extent (but not fully) to the rules for the classification of substances and mixtures defined in the Classification Labelling and Packaging (CLP) Regulation. Currently, there is **a lack of consistency in the application and enforcement of the appropriate classification of certain waste streams**.

The classification of waste streams as hazardous has important implications for its management including obligations for collection, recovery, recycling, transportation, final disposal, as well as the need for a special permit to treat hazardous waste. These additional requirements all have consequences for the cost of managing waste which has been classified as hazardous.

Application of waste classification criteria in a stringent or inflexible way under WFD Annex III could, therefore, prove a barrier for the full utilisation of waste streams currently considered in practice as non-hazardous. Clarifying such aspects and ensuring certain and proper classification of waste would assist in improving the function of the regulatory framework in this area.

For example, classification of some materials produced or used in industrial manufacturing process and which then undergo regeneration (including catalysts, solvents, reagents such as acids, and other materials) can negatively impact the reuse and recyclability of these materials within the manufacturing process, even though the material effectively remains in a closed process loop. In this situation, producers are required to bring their operations under the scope of waste regulation, and/or become subject to limitations on the amount of waste material they can accept for processing. Waste classification, in this case, results in additional burdensome regulatory requirements or

limitations. A better approach, and one which would help to promote and facilitate the principles of reuse and regeneration, would be to require the necessary management procedures via the site operating permit which, with appropriate safeguards in place, could safely allow the material to remain subject to product legislation during the entire time it is contained within the closed loop of the manufacturing process.

There are fundamental differences between the challenges which apply to waste classification methodology based on: product legislation (i.e. CLP); waste products and articles; manufacturing process residues; air and water pollution abatement residues; and contaminated soil. The constituents, composition and concentrations of materials in manufactured products and articles are well known, hence waste classification using CLP can be as simple as a look-up exercise. However, this is frequently not the case for non-homogenous wastes which often take the form of complex 'mixtures' having multiple unknown components, constituents and concentrations (which vary, and in some cases have been physically or chemically transformed as part of their normal function - e.g. soil contamination, degradation of manufacturing process materials or lubricating oils). For such mixtures, application of CLP may not be entirely appropriate. Waste legislation should allow for an appropriate balance to be found between the analytical work required to ascertain exact composition and concentrations to enable full application of CLP, against the level of analytical work needed to determine if the mixture has any hazardous properties. This is especially relevant for waste streams where the potential for recycling is limited by virtue of their complex and varying compositions.

Furthermore, the mere presence of certain hazardous properties (and hence classification of a waste stream) does not necessarily imply non-recyclability and should not prevent the material being recycled in a safe and resource efficient manner. It is clear that different recyclates (which may vary in quality, composition and the presence material with hazardous properties) will be appropriate for different end uses. Matching the correct recyclates to safe and suitable end uses will be important in maximising resource efficiency. For example, an irritation hazard of one substance, would not necessarily lead to an irritation hazard for the recycled material (which may have a completely different structure, format and use) even though the recycled material still contains the substance in question.

Overall, to achieve the resource efficiency goals of the circular economy, the classification of waste should be pragmatic – and not simply based on 'hazard'. It should incorporate risk-assessment and risk-management aspects. Amendments to waste classification should include a full impact assessment and a cost-benefit analysis.

Other aspects to be considered by the Commission

Spare parts and replaceability

Spare parts, e.g. for vehicles, must meet the performance demands of the original part and function identically with associated systems and components to make sure that the function and safety of the vehicle are not adversely affected.

The technical performance defined for these spare parts may be linked to their chemical composition. To guarantee the technical performance of the individual parts and interaction with other components, an adverse chemical reaction should be avoided. The geometry of the spare parts needs to be identical to the original part in order for the components to physically fit into the required space. For example, it is not possible to replace the bulbs in high intensity discharge lamps with mercury free bulbs unless the system has been designed to use mercury free bulbs as the size, energy requirements and heat management requirements are incompatible. Interchangeability must be ensured. This issue has been addressed in the End of Life Vehicle Directive (2000/53/EC) in 2005 with the Council Decision 2005/438/EC. Pre-consideration (2) states: 'As product reuse, refurbishment and extension of lifetime are beneficial, spare parts need to be available for the repair of vehicles which were already put on the market on 1 July 2003'. Subsequently, all new material restrictions in the ELV Directive have a 'repair as produced' exemption for spare parts that were not originally designed to be compliant with the new material restrictions.

A similarly balanced approach for vehicle spare parts is also required for substances listed under REACH Annex XIV. To ensure the continued supply of spare parts of the necessary quality and functionality, the relevant industry proposes that spare parts for vehicles that are no longer in current mass production (legacy parts) be exempted from the provisions of REACH, Article 56, when they contain substances which have been listed in REACH Annex XIV.

Furthermore, the supply of spare parts is also regulated at a national level, e.g. in Germany, where a minimum ten year availability obligation must be fulfilled. For this and other reasons, it is not uncommon for original equipment manufacturers (OEMs) and suppliers to provide spare parts for vehicles that have been out of production for more than 20 years.

Link with product legislation

Product legislation defines the minimum requirements for access to the European market. These laws often require certain performance levels be met, among other things, in terms of safety and chemical composition. These laws are essential as they take into account **possible tradeoffs between performance and chemical composition** in a way waste legislation does not, and REACH only assesses at the very end of the authorization process.

Within certain industries, e.g. the automotive industry, the use of chemicals for specific functionalities is inter alia driven by legal safety requirements. The use of flame retardants is based on the obligation of Directive 2001/95/EC on the General Product Safety Directive (GPSD) under which universal safety requirements are imposed for any product placed on the market. Recycling of a product that contains flame retardant is technically very challenging and would require special skills from recyclers to handle hazardous substances. Furthermore, since the flame retardant will eventually have to be added again, from an economical point of view, this procedure would not make very much sense. Rather than imposing recycling purely based on chemical content, the technical feasibility and economic aspect should be equally considered.

We recommend that the Commission reflect on the possible tradeoffs between performance requirements and chemical content as part of its reflection on the interface between waste/chemicals and product legislation. 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. In the toy industry, it is technically and economically extremely challenging for a 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.

Public consultation addressing the interface between chemical, product and waste legislation

The Commission's Communication on the implementation of the circular economy package: options to address the interface between chemical, product and waste legislation

Introduction

In the Circular Economy Action Plan adopted by the Commission in 2015, the Commission announced its intention to analyse and prepare policy options to address the interface between chemical, product and waste legislation. As part of the Circular Economy Package adopted on 16 January this year, the Commission published the results of its work in this area in the form of a Communication and accompanying Staff Working Document on the Interface.

The Communication addresses four obstacles that impede the safe uptake of secondary raw materials: insufficient information about substances of concern in products and waste; presence of substances of concern in recycled materials and in articles made thereof; difficulties in applying End of Waste criteria and no clear application of EU waste classification methodologies. In addition to the objectives and actions that are set out in the Communication, the Staff Working Document describes the main challenges pertaining to the four issues and proposes options to tackle them.

It is highly recommended that this questionnaire is read in conjunction with the Commission's Communication and Staff Working Document since the main content of the questionnaire relates directly to the Commission's assessment of the Interface as described in those documents. The broad policy questions in the communication and the specific options to address the different challenges outlined in the Staff Working Document are the result of the analysis of all the input received from stakeholders to date[1]. This questionnaire builds upon the Commission's analysis and is directed to both specialists and non- specialists alike with the objective of assessing the reaction to the different options and questions posed in those documents.

[1] Stakeholders provided input in response to the Commission's Roadmap on the Interface, published in January 2017, and a targeted stakeholder consultation that was conducted between April and July 2017.

B. Questionnaire on the policy options described in the Commission's Staff Working Document

Issue #1: Insufficient information about substances of concern in products and waste

Limited information is available about the presence of substances of concern in articles, waste streams and recycled materials which affects the ability to monitor compliance of recovered materials (and articles produced therefrom) with relevant legislative requirements (including REACH Regulation (EC) No 1907/2006 and CLP Regulation (EC) No 1272/2008, but also product legislation such as RoHS Directive 2011/65/EU, etc). This lack of information hinders the assessment of whether these materials are safe and fit for purpose in relation to their envisaged uses which also increases business risks for recyclers.

Challenge 1: Defining substances of concern

The concept of "substances of concern" is of utmost importance for the scope and implementation of the different options set out in this consultation.

To what extent do you agree with the definitions of the concept of 'substances of concern' proposed in the options below?

Option 1A: substances of concern are all substances identified under REACH as substances of very high concern ('candidate list substances') or listed in Annex VI to the CLP Regulation for classification of a chronic effect.

Option 1B: substances of concern are those identified under REACH as substances of very high concern, substances prohibited under the Stockholm Convention (POPs), specific substances restricted in articles listed in Annex XVII to REACH as well as specific substances regulated under specific sectorial/product legislation[2].

Challenge 1: Questions

		Fully agree	Mostly agree	Mostly disagree	Disagree	Don't know/No opinion
Option 1A		○	○	○	○	○
Option 1B		○	○	○	○	○

Challenge 2: Tracking substances of concern

The options to be considered depend on the speed and means by which tracking of substances of concern should be introduced. To what extent do you agree with the following statements on options for tracking such substances:

Option 2A: all substances of concern should be tracked by a set date

Option 2B: sector-specific tracking solutions: information on relevant substances of concern should be available to recyclers in a form commensurate to what is required.

Option 2C: tracking of substances of concern should remain voluntary.

[2] Substances which pose technical problems for recovery operations, even if not specifically flagged from the toxicological point of view, could also be considered

Option 2D: tracking of substances of concern is not necessary or suitable because information on chemicals should be obtained directly by analytical means (incoming waste batches, including imported waste, and outgoing recycled or recovered materials).

Challenge 2: Questions

	Fully agree	Mostly agree	Mostly disagree	Disagree	Don't know/No opinion
Option 2A	○	○	○	◉	○
Option 2B	○	◉	○	○	○
Option 2C	◉	○	○	○	○
Option 2D	○	○	○	○	◉

Questions that arise in relation to Issue #1:

In the framework of the on-going ordinary legislative procedure amending Directive 2008/98/EC on waste, it is envisaged that the European Chemicals Agency (ECHA) will establish and maintain a database on substances of very high concern[3] in articles. The questions below refer to other, complementary systems that may be established in addition to the database to be maintained by ECHA as mentioned above.

What would be the added value of introducing a compulsory information system in the Union that informs waste management and recover operators of the presence of substances of concern?

1000 character(s) maximum

There are different recyclers and proprietary treatment processes for different waste streams, each with their own data requirements. The waste database should reflect the needs of recyclers, as well as their exposure concerns, and only contain information that is relevant to them.

AmCham EU sees the need for sector specific tracking solutions that are based on voluntary systems, as this would not only recognize the realities of the various waste treatment processes, but allow for the feasibility and flexibly that is necessary for these processes. We believe a full implantation of EU end of Waste criteria would address these information gaps upfront, and would bring about more symbiotic end of life business models that would close information gaps while contractually protecting both the article producer and the end of life recycler.

While maintaining the highest level of safety standards, the focus should be on ensuring a pragmatic, case-by-case and application-oriented approach to chemicals safety in the circular economy. The approach should not focus on the simple presence of 'chemicals of concern', but rather the risk-management and 'safe for use' aspects of recycled materials containing such substance.

The concept of "substances of concern" used to identify substances requiring communication along the value chain for the purpose of recycling must be differentiated from that of "SVHCs" used to drive substitution. "Substances of concern" can vary depending on the articles and waste streams. A risk assessment will need to be carried out to define the "substances of concern" relevant for each sector.

Multiple 'black lists' of chemicals have the opposite effect of what is intended. Instead of focusing attention on the substances which should be substituted most rapidly it raises confusion on which should be priorities first. The REACH SVHC list sends a powerful message to the market which is also valid for recyclers, and the customers of secondary raw materials. Creating a new category of 'concern' will not solve the information gaps within the supply chain, on the contrary they risk creating greater confusion.

[3] 'Substances of very high concern' are a group of substances for which strict criteria are set in Article 57 of Regulation (EC) No1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Regristration, Evaluation, Authroisation and Restriction of Chemicals (REACH) (O J L 396, 30.12.2006, p.1-849).

How should we manage goods imported to the Union?

1000 character(s) maximum

Enhanced marked surveillance and enforcement of the EU regulation is the most efficient way to ensure a level playing field between EU-produced and imported articles. The enforcement of chemicals and product legislation at EU borders is still a weak point and extra resources should be devoted to reaching focused enforcement of EU regulation that properly targets potentially non-compliant products without placing a disproportionate burden on imports of compliant products. The successful enforcement of the EU's chemical legislation will hinge on greater training and involvement of customs authorities through improved information sharing in case of (potential) non-compliance.

Issue #2: Substances of concern in recycled materials

Currently there is no specific framework to deal with the presence of substances of concern in recycled materials and in articles made thereof. Neither is there an agreed methodology to determine the overall costs and benefits for society of the use of recycled materials containing such substances compared to disposal of, or energy recovery from, the waste. The impacts of production of virgin materials in case recycling is prevented must also be considered.

Challenge 3: Level playing field between secondary and primary material

Uptake of secondary raw materials is governed, not only by price considerations but largely by the credibility of the material itself, which may be able to perform similarly to the equivalent comparable grade of the primary material and may ensure safe use. The current technical and economic feasibility of removing substances of concern is very case-dependent. In such cases where the recovered substance cannot fully match the quality of the primary substance, several options on how to proceed are possible.

To what extent do you agree with the statements made in the following options:

Option 3A: all primary and secondary raw materials should be subject to the same rules. For example, under REACH, restrictions and authorisation conditions imposed on primary substances should apply equally to recovered materials. Materials not meeting such requirements cannot be recycled and can only be destined to energy recovery, final disposal or to destructive chemical recycling (feedstock recycling).

Option 3B: derogations from rules on primary materials could be made for secondary materials, subject to conditions and to review within a defined time period. Such decisions should be substance-specific and based on overall costs and benefits to society according to an agreed methodology. The methodology should include considerations of risk, socioeconomic factors and overall environmental outcome based on the whole life cycle of the material. In some cases, a careful analysis will have to be made, for example, on the trade-off between allowing the repair of equipment with spare parts containing substances of concern versus early decommissioning or obsolescence of that equipment.

Challenge 3: Questions

	Fully agree	Mostly agree	Mostly disagree	Disagree	Don't know/No opinion
Option 3A	○	○	◉	○	○
Option 3B	○	◉	○	○	○

Challenge 4: Level playing field between EU-produced and imported articles

A very significant proportion of the products that become waste in the EU are imported from outside the EU, where often less restrictive chemical-related requirements apply. The difficulties in ensuring even minimal supply chain

communication with non-EU suppliers and the legal impossibility to apply the REACH authorisation obligation to articles containing substances of very high concern manufactured outside of the EU clearly represents a barrier to achieving waste streams without substances of concern.

To what extent do you agree with the statements defining the following options:

Option 4A: In the case of REACH, the restriction procedure is the only means to address differences in treatment between imported articles and EU-produced articles[4] [4]. Therefore, we propose to promote the timely use of the restriction procedure under REACH and other product legislation so that EU-produced and imported products are subject to the same rules.

Option 4B: The enhanced enforcement of existing legislation to prevent the entry of non-compliant products into the EU is necessary, not only to protect human health and the environment, but also to contribute to the availability of high quality material for recycling. Therefore, we propose to promote the enhanced enforcement of chemicals and product legislation at EU borders.

Challenge 4: Questions

	Fully agree	Mostly agree	Mostly disagree	Disagree	Don't know/No opinion
Option 4A	○	◉	○	○	○
Option 4B	◉	○	○	○	○

Challenge 5: Design for circularity

To what extent do you agree with the statements defining the following options:

Option 5A: use of the Ecodesign Directive, or of other dedicated product specific legislation as appropriate (for example, WEEE or ROHS), to introduce requirements for substances of concern with the purpose of enabling recovery.

Option 5B: make use of the extended producer responsibility requirements under the Waste Framework Directive to promote the circular design of products.

Option 5C: make use of voluntary methods of environmental performance certification (e.g. national or EU Ecolabel of green public procurement) to introduce rules for substances of concern.

Option 5D: make use of voluntary approaches such as value chain platforms for exchange of good practice in the substitution of materials in the design phase.

Challenge 5: Questions

	Fully agree	Mostly agree	Mostly disagree	Disagree	Don't know/No opinion
Option 5A	○	○	◉	○	○
Option 5B	○	○	◉	○	○

[4] The incorporation of substances of very high concern in imported articles is not subject to the REACH authorisation procedure whereas the use of such substances in EU-produced is subject to authorisation

Option 5C	○	○	○	◉	○
Option 5D	○	◉	○	○	○

Questions that arise in relation to Issue #2:

How can one reconcile the idea that waste is a resource that should be recycled and, at the same time, ensure that waste that contains substances of concern is only recovered into materials which can be safely used? How do we strike the balance?

1000 character(s) maximum

AmCham EU supports a case-by-case risk-based approach, within the framework of existing chemical legislation. This should be application oriented. Recycling should be a valid option, and relevant waste treatment exposure scenarios defined to assess what waste can be safely recycled and that the recycled materials can be placed on the EU market in full compliance with REACH and other market legislation. In addition, other criteria should also be taken into consideration such as economic viability of recycling operations, value of recycled material and energy savings.

Should recycled materials be allowed to contain chemicals that are no longer permitted in primary materials? If so, under what conditions?

1000 character(s) maximum

The re-use or life-time extension of products through refurbishment and remanufacturing must be considered as the most important way to prevent waste creation. This has been emphasized by the EU Circular Economy Strategy and the Waste Framework Directive. Refurbishment of used products ensures that no new hazardous substances are used to manufacture new equipment. Spare parts need to be considered in any regulation looking into the regulation of waste streams as an essential component to a circular economy, as already recognized by the RoHS Directive which allows recovered parts to be re-used even if they contain restricted substances. The definition and the scope of "legacy substances" need to be clarified. If they refer to substances legally produced in the past which are now prohibited in the EU and may be contained in recovered materials todays, only a limited number of substances whose uses are of high risk should be labelled as such.

We also believe that should they pose no risk either during waste treatment, or in the new secondary material or products, we should allow for recyclates of different level of purity on the European market. Plastics present only in B2B applications that will never be in contact either with workers or the end consumer could be of lesser purity, and therefore cheaper and more interesting to buy than virgin material.

In some instances recycling with capture of the hazardous substance in the article may be the most appropriate risk control method e.g. for metals which obviously cannot be incinerated with the only final disposition being landfill in the ground (from when it was originally mined). This has been recognized by ECHA RAC for lead, with allowances for used in recycled articles e.g.sewer pipes where minimal migration has been demonstrated. Alternative routes of management would lead to greater environmental exposure and potential risks.

Issue #3: Uncertainties about how materials can cease to be waste

The current differences among the Member States on how and under what criteria waste can cease to be waste generates legal uncertainty for operators and authorities and creates difficulties in the application and enforcement of chemical and product legislation, which requires, as a starting point, to know whether a given material is still subject to waste legislation (either as hazardous or non-hazardous waste) or has ceased to be waste.

Challenge 6: Improving certainty in the implementation of end-of-waste provisions

Option 6A: take measures at EU level to bring about more harmonisation in the interpretation and implementation by Member States of end-of-waste provisions laid down in the Waste Framework Directive. To what extent do you agree with the following possible actions relating to these options:

i. Stepping up work[5] on the development of EU end-of-waste criteria[6] [6]. This would ensure that more waste streams are covered by clear EU-wide rules specifying which conditions need to be met to exit the waste regime and introducing support measures that would enable Member States to check compliance by recyclers with the exemption from REACH registration.

ii. Removing the registration exemption for recovered substances provided in REACH[7] thus requiring that all recovered substances should be registered under REACH and thereby achieve end-of-waste status;

iii. Where other specific product legislation provide conditions that ensure the safe placing on the market of a substance or mixture, it is proposed to recognise these conditions to be end-of-waste criteria[8] and, where justified[9], introduce a specific exemption from REACH registration.

Option 6A: Questions

	Fully agree	Mostly agree	Mostly disagree	Disagree	Don't know/No opinion
i	○	◉	○	○	○
ii	○	○	○	◉	○
iii	◉	○	○	○	○

Option 6B: take measures to ensure more consistency of practices at Member State level. Indicate which of the following approaches would best achieve this purpose:

i. End-of-waste status can only be achieved as a result of an ex-ante decision by a Member State competent authority (i.e. permit);

ii. A recovery operator can make his own assessment of whether end-of waste status is achieved. This assessment is subject to an ex-post verification regime by competent authorities; or

iii. A combination of these approaches, e.g. distinguishing on the bases of the nature of specific waste streams.

Options 6B: Questions

	Fully agree	Mostly agree	Mostly disagree	Disagree	Don't know/No opinion
i	○	○	◉	○	○
ii	○	◉	○	○	○
iii	○	○	◉	○	○

[5] When considering this option, as highlighted in the staff working document, resource implications (e.g. in terms of additional staff needed) and challenges related to setting end-of-waste criteria uses of a recovered material need to be borne in mind.
[6] In the framework of the on-going ordinary legislative procedure amending Directive 2008/98/EC on waste it is envisaged that the Commission shall monitor the development of national criteria in Member states and assess the need to develop Union wide criteria on this basis.
[7] Article 2(7)(d) of REACH exempts from registration substances which are recovered from waste in the EU, subject to certain conditions being satisfied. However, since this Article does no set any specific provisions on how the use of this exemption is to be monitored by ECHA or by Member States, the practical ability of Member States to access the effectiveness of, or compliance with, the complex conditions of the exemption is currently quite limited.
[8] Example of this could be the approach defined in Article 18 of the Commission proposal for a Regulation on Fertilisers, whereby end-of-waste status is recognises via compliance with the recovery rules and product criteria set out for the different constituent material categories in the annex of this draft regulation
[9] Substances may be exempted from REACH registration requirements if the conditions in Article 2(7)(b) of REACH are satisfied

Questions that arise in relation to Issue #3:

How and for which waste streams (and related to which uses of the recovered material) should the Commission facilitate more harmonisation of end-of-waste rules to improve legal certainty?

1000 character(s) maximum

AmCham EU believe that EU harmonized End-of-waste criteria are critical for the creation of a comprehensive and profitable market for recycled materials, as it would allow for the necessary economies of scale. The lack of harmonisation and the different interpretations of end-of-waste provisions across the MS, has led to uncertainties about the conditions under which companies must treat their waste and when these can be reintroduced into the production processes.

There can be no European circular economy without EU harmonised end-of-waste criteria. While, the EU has defined Union wide end-of-waste criteria for iron, steel and aluminum scrap; glass culet and copper scrap, other key waste streams, such as plastic, are not covered yet. There is a need for generic, cross-sectoral end-of-waste criteria that will facilitate practical implementation and foster an EU-wide circular economy, notably for sectors identified as "high potential sectors for a circular economy" by the EU Commission

Establishing EU harmonized provisions on end-of-waste status is the best way to guarantee the smooth functioning of the internal market. When they don't exist Member States have a tendency to adopt different requirements and interpretations, leading to the fragmentation of the market.

Issue #4: Difficulties in the application of EU waste classification methodologies and impacts on the recyclability of materials (secondary raw materials)

Inconsistent application and enforcement of waste classification methodologies, leading to waste being misclassified, or classified differently in different Member States or in different regions of the same Member State, may lead to uncertainty about the legality of waste management practices of certain important waste streams containing substances of concern. The situation described has also been reported to lead to uncertainty for operators and authorities in cross-border movement of waste, resulting in delays or even refusal of entry and thereby resulting in an inefficient internal market for waste materials in the EU. Furthermore, in some cases, misclassification of waste could lead to poor management of risks during waste management and to potential risks to human health and to the environment.

Challenge 7: Approximating the rules for classification of chemicals and waste.

To what extent do you agree with the following options:

Option 7A: the rules for classifying waste as hazardous or non-hazardous in Annex III of the Waste Framework Directive should be fully aligned with those for the classification of substances and mixtures under CLP. This should enable a smooth transition and placing on the market of secondary raw materials in full knowledge of their intrinsic properties.

Option 7B: hazardousness of waste should be inspired by the classification of substances and mixtures under CLP, but not fully aligned with it. Specific considerations of each waste stream and its management may allow wastes to be considered as non-hazardous even if the recovered material will be hazardous when placed on the market as secondary raw material

Challenge 7: Questions

	Fully agree	Mostly agree	Mostly disagree	Disagree	Don't know/No opinion
Option 7A	○	○	○	◉	○
Option 7B	○	◉	○	○	○

Challenge 8: Classifying waste taking into account the form in which it is generated.

Like some primary materials, the constituent substances of some types of waste may be retained, to a greater or lesser extent, in a matrix[10] . The issue of the bioavailability/bioaccessibility of such constituent substances and their bearing on the hazard properties of the material is currently being assessed by the Commission. Under product legislation, there is potential for the CLP Regulation to introduce such bioavailabilty considerations in hazard classification of substances and mixtures, although methodologies to assess this are still being developed. The waste legislation only recently provides this option for classifying waste for their ecotoxicity. Given the relevance that proper classification of waste as hazardous or non-hazardous has in its subsequent management and potential for recovery, several options exist to address this issue.

To what extent do you agree with the following options:

Option 8A: once the rules have been established under CLP, waste classification should also consider the form in which it is produced, taking account of the bioavailability/bioaccessibility of the substances contained in the waste, subject to reliable scientific information to support claims for reduced hazard classification.

Option 8B: Under Annex III of the Waste Framework Directive, waste should be classified exclusively based on the concentration of hazardous substances it contains, without further consideration of bioavailability or bioaccessibility.

Challenge 8: Questions

	Fully agree	Mostly agree	Mostly disagree	Disagree	Don't know/No opinion
Option 8A	◉	○	○	○	○
Option 8B	○	○	○	◉	○

Questions that arise in relation to Issue #4: Are there any other points that you wish to make regarding the application of waste classification rules in the context of the interface between chemicals, products and waste legislation?

1000 character(s) maximum

Many value chains are already applying recycling and a circular approaches where this makes economic sense. The Commission should develop a flexible voluntary framework to support recycling and the circular economy, which is to a large degree made up of SME companies. The Commission should avoid overly prescriptive regulations which focus too much on hazardous substances which in practice, based on risk assessments, may actually be quite safe for use. Overly prescriptive, complex requirements will undermine and inhibit the potential growth of the circular economy, which needs to be market driven based on economic value. Performance of products made using recycled material will remain a critical element to support durability and sustainability. Negative impacts in performance of products made with recycled material will undermine the circular economy and should be avoided.

[10] For example, in relative terms, certain plastic matrices could release a given substance more than a glass matrix; this means that the same hazardous substance (e.g. lead in plastics, lead in glass) would be less bioavailable from certain matrices than from others.

THE CIRCULAR ECONOMY

10 innovative business solutions and how to go further

AmCham EU

SPEAKING FOR AMERICAN BUSINESS IN EUROPE

Contents

Introduction

Our global economy has long relied on a 'linear' economic model – natural resources are extracted and used in making products and when those products are of no further use, they are disposed of. This model is based on the assumption that there are large or unlimited supplies of cheap, easily accessible raw materials and energy sources. The reality is that most resources are finite. Rapid economic and demographic growth around the globe determined that an alternative economic model was needed to reduce waste, reuse precious and limited resources, and shift towards renewables. No longer could the focus be on meeting the needs of the present at the expense of future generations.

To respond to this need, the concept of circular economy was developed a few decades ago to ensure production is more sustainable in its practices by using resources more efficiently and responsibly. Simply using less is not enough. The aim is to maximise the use and value of not only raw materials, but also products and waste. Production processes are made more efficient, products last longer by being made more durable and repairable, and an increasing amount of waste is collected and reused or recycled. As a result, the circular economy is a driver for innovation and the development of new business models.

Moving from a linear to a circular economy is obviously a colossal enterprise. From design, production and consumption to waste management and the market for secondary raw materials, all sectors and aspects of our economy are impacted. This transition requires profound political, economic and psychological change in our society, and the involvement of all stakeholders is necessary for its success.

The American Chamber of Commerce to the European Union (AmCham EU) represents US companies operating and investing in Europe and is committed to making Europe more competitive in the global marketplace. Its membership reflects various sectors and many of its member companies have been active in introducing business models and practices that reflect the circular economy. In seeking out circular economy business models among its member companies, AmCham EU found encouraging developments.

Ten examples are included in the following pages which demonstrate the innovative ideas developed and the noticeable progress that has been made over the past 20 years in a myriad of sectors such as IT, aviation, oil refining, packaging, healthcare, construction equipment and tyres. But much more can be done. This will require close collaboration between business and government to ensure that policies are in place which further encourage sustainable business solutions. It will need to include clever and pragmatic policy changes as well. Only by balancing economic, social and environmental factors can we achieve true sustainability and a truly circular economy.

'This will require close collaboration between business and government to ensure that policies are in place which further encourage sustainable business solutions.'

Plant-based materials: the future of sustainable plastics

The industry is constantly seeking ways to develop new innovative packaging design and materials. Much progress has already been made in finding ways to use less material – lighter plastics bottles, sleeker cans, ultralight glass material – all while ensuring that packaging is completely recyclable.

One example of a more recent innovation is PlantBottle™ packaging, which combines the benefits of recyclable pack design with the use of renewable material. Instead of using oil-based material for polyethylene terephthalate (PET) plastic components, the bottles are made using partially renewable, plant-based material, which is then combined with recycled content. Today, there are more than 35 billion recyclable PlantBottles™ in circulation around the world for water, juices, sodas and teas.

Plant-based packaging is mostly made of sugarcane-based ingredients, but packaged goods producers are continuously working to source plastic from other plant residues. These technological developments require the continual assessment of agricultural products that have a low environmental impact and protect food security.

The use of renewable plant-based technology is also expanding to other industries including the apparel, automotive and wider food sectors.

Did you know?
Since the introduction of PlantBottle™ packaging, **315,000 metric tons of CO_2 emissions** have been eliminated from the production process. This is equivalent to the amount of CO_2 emitted when burning **743,000 barrels of oil**.

➤ How to go further?

The use of plant-based recyclable materials has the potential for a promising future but current market conditions are holding them back. Obstacles include subsidy schemes favouring biofuels, a lack of infrastructure for the sourcing of plant-based materials, and imposed EU import tariffs for bio-based material components, even though these products are currently not produced inside the Union.

Another important element is strengthening the implementation of Extended Producer Responsibility (EPR). Minimum operating requirements are critical to ensuring a level playing field and fair competition between EPR schemes, as well as greater transparency.

Recycling superalloys: ensuring sustainable production of high performing aircraft engines

The aviation industry is developing the next generation of high performing aircraft and engines to improve sustainability and reduce emissions. To achieve this, these new engines require materials that can withstand extreme temperatures without melting. Alloys, a mixture of elements with the characteristics of metal, are among such materials and engineers are continually looking to develop them into more advanced alloys or 'superalloys'.

An example of a superalloy is rhenium, which has unique properties such as strength and heat resistance. However, rhenium is a rare chemical element that is only produced as a by-product of copper and molybdenum refining. The industry is therefore developing ways to reduce both its use and waste through what is called the four-pillar strategy of 'reducing, reverting, recovering and recycling':

- Reducing: Develop new alloys, which contain less rhenium.
- Reverting: Re-melt scrap material containing rhenium.
- Recovering: Remove rhenium from superalloy dust produced during cutting.
- Recycling: Remove used components from engines, send them back to the manufacturer to be re-melted and cast into new components.

Reducing, reverting and recovering are relatively straightforward procedures that are already embedded in standard manufacturing processes. Recycling superalloys components, however, can prove challenging as they are often used in other efforts like making stainless steel, rather than recycled and used anew. This is because superalloys contain high concentrations of nickel and chromium, two of the main components of stainless steel and rhenium therefore is lost.

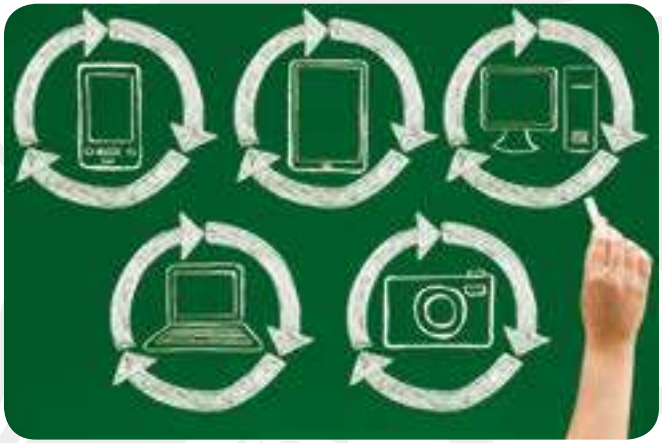
➤ How to go further?

Industry has the expertise to determine the design and materials necessary to increase production and performance while maintaining product integrity. As competition for the world's resources increases, it is crucial that recycled materials are used in new products. Recycling policies should therefore be developed and maintained in cooperation with industry to maximise the best use of scarce elements.

Closed loop recycling and reuse: towards a circular IT industry

In an effort to maximise how long and often products such as notebooks, desktops, monitors, toners, ink cartridges and printers as well as their components and materials are used, the information technology (IT) industry invests heavily in efforts to recycle and reuse materials and products' parts.

While no-longer functioning IT products could simply be thrown away, the IT industry prefers to recycle plastic parts in these items. Once these products are broken into pieces, the plastics are sorted, cleaned, and used again in a new product. This 'closed loop' recycling means that plastics extracted from no-longer functioning products are collected in a return system and processed for use in a new product. These plastics therefore remain in a 'loop' of use. This process produces fewer carbon emissions than manufacturing new plastics for every new product and has allowed the IT sector to recycle millions of pounds of plastic.



Another way to draw on fewer resources in production, accrue less waste, and reduce carbon footprint, is to ensure that functioning IT equipment parts are used for as long as possible. This reuse of materials means smaller parts and components ranging from servers, personal computers, printers, to storage equipment are extracted and tested. Provided they work as new, they are fitted into equipment that needs to be repaired, as well as used in products manufactured from scratch.

Did you know?
Lifecycle analysis, which assesses the environmental impacts associated with all the stages of a product's life, has shown that the production of closed loop recycled plastics emits **10% less CO_2** compared to newly-created plastic.

➤ How to go further?

EU-wide recycling and reuse policies must operate smoothly across borders to be effective. Currently, various obstacles hinder this 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.

Industrial compressors: resource efficiency opportunities across the life cycle

Industrial compressors are very large energy-producing devices used in refrigeration, as well as heating and cooling by a wide range of industries including food production and petrochemicals. They play a critical role in optimising energy resources to provide for large-scale operations most of us take for granted.

The manufacturing of industrial compressors involves considerable amounts of iron and aluminum, and the final product often counts a weight of over 1,700 kilogrammes. The manufacturing process also results in a lot of metal waste, often as much as half the weight of the final product. Due to the volume of iron and aluminum in industrial compressors, they make excellent candidates for the circular economy throughout their lifetime. Waste leftover from the production process, replaced parts during a product's use and no-longer functioning compressors can all be recycled. Both environmental and economic benefits are to be had, as manufacturers have access to cheaper recycled metal and transportation and society as a whole benefits from a significant reduction of waste and CO_2 emissions.

However, various obstacles exist. The lifespan of an industrial compressor can exceed 25 years and as the manufacturer does not retain the responsibility for servicing a device throughout this time, it is not always possible to recuperate the equipment for reuse and recycling.

➤ How to go further?

Better traceability of the equipment should be ensured during a compressor's lifespan. Equipment purchasers should be required to inform the manufacturer of ownership changes, as well as when compressors reach the end of their life. The overall cost of recycling various equipment should also be considered when assessing best waste management options as there are significant differences between products with components that are screwed or welded and those with components melted into each other, for example.

Improving recyclability of healthcare plastics: a value chain approach

Due to the amount of plastics used in hospitals, there is great potential for increased recycling of healthcare plastics. In hospitals, a substantial amount of materials such as sterilisation wrap, gowns, intravenous therapy (IV) bags and packaging materials are being tossed into trash bins and recent studies report that hospitals generate over 15 kilogrammes of waste per day, per occupied bed. Much of this waste is plastic and ends up in landfills or incinerators despite the fact that up to 85 percent of it is non-hazardous.

However, barriers to recycling healthcare plastics exist across the entire value chain. It starts with product design and manufacturing where the variety of plastics and additives on the market and product design features inhibit recyclability. Lack of training among hospital staff and limited space and infrastructure within hospitals to sort recyclable materials further impede the recycling of healthcare waste. Obstacles facing healthcare plastics disposal also include recyclers' varying demands and availability to collect materials by geographic location.

The creation of private, technical consortia of industry peers[1] across healthcare, recycling and waste management industries allows for a multi-stakeholder approach to address existing obstacles. Such a group brings together the necessary stakeholders to effectively develop innovative solutions and leverage market opportunities to tackle an ever-growing and complex waste management issue.

[1] An example is the Healthcare Plastics Recycling Council (HPRC).

Did you know?
Recycling one ton of plastic saves **16.3 barrels of oil, 22 cubic meters of landfill space** and enough energy to power an average house for six months.

➤ How to go further?

Governments and the private sector must develop sustainable solutions for effective recycling. This includes harmonisation of labelling and the development of automated sorting processes to increase the ease, efficiency, and cost-effectiveness of recycling. It is also important to implement incentives to increase the inclusion of recycled plastics in goods sold on the market.

Up-cycling: going beyond recycling

Perfluorinated polymers are materials with unique strength and durability. Although we are not always aware of it, they play a crucial role in many daily products and services: coating in pans and bakeware, building materials, automobiles, telecommunications and electronics. In short they make our lives cleaner, safer and easier.

But what happens when these products reach their end of life? Too often, they end up in incinerators or landfills and very valuable materials are lost. Chemical recycling is possible for perfluorinated polymers but is not efficient since materials are transformed into very fine powder or wax with limited usability. More sustainable solutions must be developed and implemented not only to ensure that valuable materials are not wasted, but also to address the issue of overflowing landfills and increasingly expensive waste management.

Manufacturing companies are developing new solutions to enable the reuse of precious materials without sacrificing their capability characteristics. One of these solutions is up-cycling. Up-cycling means reusing materials or an object to create a product of higher or equal value. In this case, up-cycling can restore products made of perfluorinated polymers into starting material with 100% of its original performance qualities to be used in a new product. The environmental relief provided by up-cycling solutions is also significant in terms of emissions, energy and waste savings.

Did you know?
The production of one metric ton of up-cycled perfluorinated polymers eliminates **10 metric tons of acid waste and 10 metric tons of CO_2 emissions** from the overall production process.

➤ How to go further?

Given the many aspects of up-cycling, it should fully be included in the EU's waste hierarchy guide, which consists of five steps to prevent and process waste. The EU should also encourage and support similar examples of industrial symbiosis, through fostering collaboration between industries to buy and sell residual products, resulting in mutual economic and environmental benefits.

Long-lasting catalysts: cleaner fuels for the future

The oil refining industry uses hydroprocessing catalysts (HPC) to remove over 99% of contaminants, such as nitrogen and sulfur from fuel oils, contributing to cleaner and more efficient final use fuels. These catalysts typically contain valuable metals such as nickel, cobalt, molybdenum and/or tungsten which can be recycled and used again, provided the secondary materials are of sufficient quality.

However, catalysts' efficiency decreases over time due to the accumulation of impurities. To address this and save valuable materials, the industry has invested significant resources into developing processes to maximise the lifespan of HPCs, thereby maximising the use of precious resources.

To achieve this, HPCs are first treated for regeneration and reuse. Their lifespan is therefore extended, reducing the need to purchase new catalysts and use new raw materials. Second, HPCs are recycled. When catalysts' properties no longer meet required standards and their performance cannot be brought up again to the desired level by regeneration, catalysts are recycled. The valuable metals contained in catalysts are recovered and reused for further catalyst preparation or other use.

Did you know?
The use and reuse of catalysts have helped remove over **50,000 tons of sulfur** from diesel fuel over the last 5 years. This greatly improves air quality and helps vehicles to comply with stringent emissions regulations worldwide.

➤ How to go further?

The reuse of catalysts will increase only if secondary products can be traced and perform to specific norms and standards. It is therefore crucial that regulation foresees rules guaranteeing the market availability of high quality and effective secondary products.

Built to last: silicones and long-lasting buildings

Buildings are built to stand for many decades. It is therefore essential their environmental impact is reduced and their components last as long as possible. In both new buildings and renovation projects, silicones are used to protect, strengthen, preserve, and provide innovative high performance features including insulation, energy-saving facades, smart windows, protective coatings and lighting.

In particular, silicone sealants and adhesives exhibit outstanding durability. They resist high temperatures, ultraviolet light, oxygen and ozone; are less susceptible to mechanical fatigue and seismic risks; and less prone to absorb water. After 40 years of outdoor weathering in sunny climates, silicones show comparatively little change in physical properties. Meanwhile, thanks to their durability, silicone products can significantly reduce the carbon footprint of commercial construction. A recent Global Silicone Council life cycle assessment study shows that the use of silicone products can help save on average 9 times the amount of greenhouse gases required to manufacture them.

Beyond durability, silicones further contribute to the circular economy by reducing raw material needs. In the manufacturing of windows, bonding glass directly to the frames makes it possible to reduce the height of the profile, which in turn leads to more incoming light, less raw material used and lighter windows.

Did you know?
The use of silicone technology extends the lifespan of buildings while also reducing energy consumption. Using silicones in window manufacturing saves **15% in energy** compared to when using other materials.

➤ How to go further?

Because all stages of a product's life present an opportunity to improve resource efficiency, the EU should not focus solely on traditional product end-of-life and recycling policies. Rather, policies should also be developed to encourage lengthening a product's lifespan, as well as evaluating production and use policies to ensure the product is as resource-efficient as possible throughout its life.

Remanufactured products: as good as new

Remanufacturing, or 'reman', is an exchange business: customers return their components that have reached the end of their lives to the original manufacturer and get a remanufactured one in exchange. End-of-life components are called cores, and can range from engines, turbines, gas compressors, locomotives and railcars to hydraulics, drivetrains and fuel systems. Remanufacturing restores these cores to their original specifications or higher, allowing them to serve another lifecycle.

This is advantageous to both customers purchasing remanufactured products and the environment. Customers receive a refund equal to the value of the returned core as well as a remanufactured product that performs and is warranted the same as a new part, yet costs a fraction of the new part price. The environment benefits from the process as fewer raw materials are required and energy is saved.

Remanufacturing has been officially recognised in Europe as an initiative with high potential to promote innovative industrial processes. Unfortunately, not all customers around the world can benefit from the significant sustainability benefits that remanufactured products deliver since some countries have laws and customs regimes that prohibit the ability to sell remanufactured parts.

Did you know?
Over the past 10 years, more than **500,000 tons of components** – equal to five Eiffel Towers per year – have been remanufactured. This has cut CO_2 emissions by more than **one million tons** compared to when new products are manufactured.

➤ How to go further?

Regulation must support remanufacturing processes. It is essential that cores are not classified as waste material. Moreover, policy-makers around the globe should continue to promote remanufacturing and remove trade barriers on remanufactured products, for example by following in the footsteps of the Trans-Pacific Partnership (TPP) and the EU-Vietnam Free Trade Agreement.

Retreaded tyres: lasting longer, going further

Tyres are currently designed and manufactured so they can easily be adapted for reuse, saving raw materials and reducing the industry's environmental footprint. To extend the life of tyres, the industry has introduced a process whereby the worn-out tread of a used tyre is replaced with a new layer of tread compound. The retreaded tyre can then be put back on the road without compromising either safety or quality.

Retreading is now being successfully applied to commercial truck and aircraft tyres and occasionally to off-the-road and farm tyres. At this time the economic feasibility of retreading is very limited for car tyres. The process may be repeated as long as the casing is intact and can increase the normal lifespan of a truck tyre by as much as three times, equivalent to up to one million kilometres using the original casing.

Despite being a successful process, the current truck tyre retreading rate in Europe is only about 40% and declining. The lack of a harmonised EU non-waste status for casings suitable for retreading needs to be addressed to help support this activity.

Did you know?
Retreading can increase the normal lifespan of a truck tyre by as much as three times, which saves up to **100 kilogrammes of materials** per tyre.

➤ How to go further?

The EU should recognise successful activities that promote reuse, like retreading, and harmonise end-of-waste criteria to avoid national distortions on the EU market for secondary goods. Furthermore, activities that promote reuse and extend the life of products, like retreading, should be supported by green public procurement schemes.

Conclusion

The circular economy is not a new concept, as Europe has been pushing for higher resource efficiency for more than 20 years. AmCham EU members have already positively assessed the circular economy's potential and have started developing new products and business models. However, various obstacles exist, as outlined in the preceding examples, and prevent industry from fully implementing more sustainable initiatives. The commitment of all stakeholders is therefore necessary to both continue to produce and enjoy products on a large scale, as well as foster energy savings and emissions reduction.

In December 2015, the European Commission published its long-awaited Circular Economy Package, which includes revised legislative proposals on waste. The release of this package by the Commission's First Vice-President, Frans Timmermans, and Vice-President, Jyrki Katainen, made very clear that circular economy is not only an environmental policy agenda. It is also a cross-sectorial strategy designed to boost growth and jobs in Europe and support new and sustainable business models.

Industry has a critical role to play in Europe's transition to a circular economy and its capacity to encourage other regions of the world to follow its lead. The Commission, Members of the European Parliament and Member States have shown a keen interest in learning more from industry experience and proposals on how they can shape policy to support the transition from a linear to a circular economic model. With these business cases, AmCham EU encourages an open dialogue with decision-makers highlighting that while progress has been made, policy changes are needed to effectively transform our economy and secure Europe's competitiveness.

Contributors:

With thanks to FLEISHMANHILLARD

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 2015, directly supports more than 4.3 million jobs in Europe, and generates billions of euros annually in income, trade and research and development.

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AmCham EU
SPEAKING FOR AMERICAN BUSINESS IN EUROPE

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Introduction

As the global population continues to grow, our planet is struggling to respond to the consequences of today's economic models. In particular, linear processes, whereby products are discarded quickly after their use, put increased pressure on the earth's finite resources.

It is clear that we need to transition to more circular and sustainable economic systems and low-carbon operations. Such systems and operations seek to optimise resource management and extend the useful life of products. They prevent and reduce waste generation and CO_2 emissions by encouraging reusability, reparability, recoverability and recyclability.

In Europe, the circular economy promises to maintain the value of products, materials and resources for as long as possible, while protecting human health and the environment. It strives to strengthen the competitiveness of the EU, ensuring global leadership in the development and use of cutting-edge technologies, practices and business models. In 2016, circular activities in the EU generated almost €147 billion in value added with €17.5 billion worth of investments.

Business involvement is key to the success and implementation of the circular economy in Europe. Already today, the private sector has demonstrated leadership in the development of more sustainable practices. This brochure outlines a series of 'circular' solutions from across member companies of the American Chamber of Commerce to the European Union (AmCham EU). The examples feature different dimensions of circularity: (1) products that make use of recycled or secondary resources; (2) processes that enable the recycling of products or materials; or (3) services that contribute to attaining the circular economy in Europe and globally.

Improved collaboration within the value chain and between industry and governments is critical to advancing and promoting sustainable business solutions. If a supportive regulatory ecosystem exists that maintains competitiveness, it will enable companies to continue to be a driving force in the evolution of the European circular economy, setting a strong example for the rest of the world.

It is important that the EU invests and supports new and dynamic circular practices to help bring these solutions to the forefront of international markets. To that end, this brochure offers a set of recommendations for EU and national policy-makers to encourage more circular economy initiatives and establish a model for Europe's success and a more sustainable future.

Products

Maximising the use of raw materials

There is a need to decrease the use of virgin raw materials, those not previously used or treated, and increase the recovery, reuse and recycling of by-products in manufacturing processes. 3M is committed to addressing this through the increased use of renewable and recycled materials when designing its products and packaging.

3M is advancing this ambitious objective by incorporating recycled content in its Thinsulate™ insulation products, which reduces the use of virgin raw materials and decreases the carbon footprint. Thinsulate™, is a thin, light and warm synthetic fibre insulation that is made from 83% recycled post-consumer material. The use of such recycled materials decreases the reliance on virgin resources, thereby lowering energy consumption as well as air and water emissions. Thanks to a third-party certification by the Global Recycled Standard, 3M is also able to use polyester that has been recovered from recycled plastic bottles for its insulation.

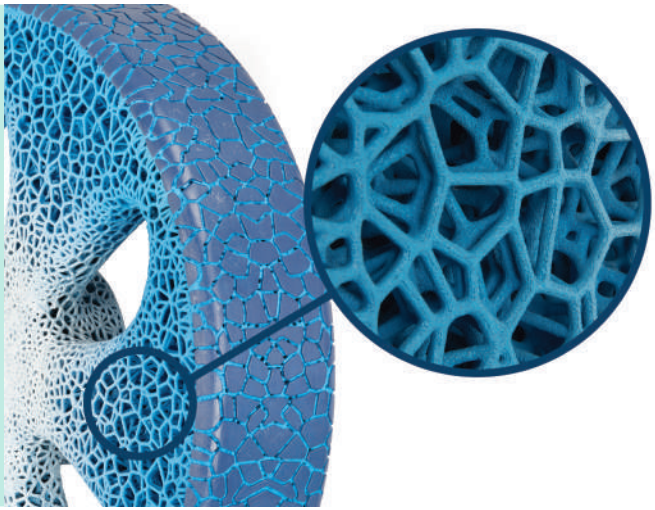
3M manufacturing plants that produce Thinsulate™ insulation are recycling 100% of their polyolefin waste material, selling it to companies that use it for everything from oil booms to furniture. Thinsulate™ has received the globally recognised Oeko-Tex Standard 100 Class I Certificate for raw and other materials, therefore making it safe and suitable for babies and young children. It also uses bluesign® approved chemical products and raw materials, meaning it is produced in a resource-conserving way with minimal impact on people and the environment.

Where?
Europe and global

> 3M manufacturing plants that produce Thinsulate™ insulation **recycle 100%** of their polyolefin waste.

A tyre for sustainable mobility

The Vision tyre is made of **bio-based and recycled materials**, while being fully rechargeable and biodegradable.



Imagine a future in which tyres are fully sustainable, rechargeable and made of biodegradable materials. Today's tyres, even those designed to the highest quality standards, still have a limited lifespan and are produced using fossil-fuel feedstock.

Vision, Michelin's latest innovation project, will take tyres towards a safer, more intelligent and sustainable future. This concept tyre combines four major innovations to create an organic, rechargeable, airless and connected tyre. It has been designed from bio-sources and recycled materials to minimise its environmental footprint. Moreover, with the aid of 3D printers, the tyre's life can be extended by depositing the right amount of biodegradable rubber to recharge the tread pattern. Its biomimetic alveolar architecture (a sustainable honeycomb-like structure) and sensors provide comfort, safety and will enable the real-time communication of information to consumers.

Designed to optimise resource consumption throughout its life, the Vision tyre is made of bio-based and recycled materials, while being fully rechargeable and biodegradable. This concept provides a concrete solution to product obsolescence and ensures comfort and safety for users. Through continued investment in research and development (R&D), Michelin demonstrates that Vision is a dream within our reach, a feasible roadmap that features innovations already under study, that will progressively come to market in the years to come.

Where?
France and global

Pushing the boundaries of sustainable fibre to-go cups

In 2018, Starbucks and McDonald's, later joined by other supporting partners from the food and beverage industry, teamed up in a unique pre-competitive collaboration – the NextGen Consortium. Together with Closed Loop Partners, they launched the NextGen Cup Challenge, an open-sourced, global innovation competition to redesign the next generation of fibre to-go cups for waste reduction. The World Wildlife Fund (WWF) acts as an advisory member of the consortium and OpenIDEO is also an innovation partner.

The challenge aims to design hot and cold fibre to-go cups that are more widely recyclable and/or compostable. The winning solutions will contribute to turning 250 billion paper cups used annually into valuable materials. The consortium recently announced twelve winners amongst which six are European companies. The winning solution designs included: redesigned cup liners, novel materials and reusable cup service models. All of these advance the NextGen Cup and support the transition towards a more circular economy, where materials are reused and the reliance on raw materials is reduced.

The NextGen Cup Challenge is just the first step of a three-year plan. Building on the initial successes, the NextGen Circular Business Accelerator will support the development of prototype solutions in cooperation with suppliers, consumers, recyclers and composters, to ensure that future winning solutions are properly disposable and can be successfully reused.

Where?
Belgium, Finland, France, Germany, the Netherlands and the UK

> The winning solutions will contribute to turning **250 billion paper cups** used annually into valuable materials.

Processes

From the sky to your desk

Aircraft are amongst the most complex machines to build. They need to adhere to the highest air safety requirements and make use of many different materials. One of these is carbon fibre, which has many valuable properties for the aerospace industry, but is challenging to recycle. Carbon fibre is a remarkably strong, yet light material that is used on the Boeing 787 Dreamliner and new 777X airplanes.

In December 2018, Boeing, together with ELG Carbon Fibre, announced a groundbreaking solution to recycle excess aerospace composite material for reuse in new products, such as automotive parts and electronic accessories. This solution recovers excess carbon fibre from eleven Boeing airplane manufacturing sites and is a first for the aerospace industry. It was initially tested on the Boeing 777X airplane wings, where excess material was placed into furnaces that evaporated resin holding the carbon fibre layers together, leaving behind a clean and reusable resource.

This process has already recycled 380,000 pounds of carbon fibre. Boeing and ELG Carbon Fibre have developed a successful method for recycling material in various aerospace manufacturing processes and created a market for recovered carbon fibre. This collaboration is anticipated to reduce solid waste from aircraft by more than half a million kilograms per year and will represent an innovative recycling method that eliminates composite scraps from being landfilled.

Where?
US and global

> Already today, **380,000** pounds of carbon fibre material has been recycled for reuse in new products.

BOEING

New investments in enhanced bottle recycling

The ambition is to **close the loop** on collection and recycling, giving all packaging a new life.

The Coca-Cola Company is taking steps to enhance and increase recycling. It is turning packaging, such as coloured plastic (PET) bottles which may be excluded from certain recycling streams, into recycled materials. The ambition is to close the loop on collection and recycling, giving hard-to-recycle packaging a new life.

The Coca-Cola Company has announced an agreement extending a loan to Ioniqa Technologies in the Netherlands, to facilitate the development of proprietary technology and produce high-grade, recycled PET content from hard-to-recycle PET waste. The aim is to accelerate the development and deployment of recycled PET in bottles. This has already produced a prototype sample bottle using 25% marine plastics in partnership with Indorama Ventures. The Coca-Cola Company has also established a framework with Loop Industries Inc. for its bottlers to purchase 100% recycled Loop PET. Coca-Cola European Partners is the first bottler to enter a multi-year supply agreement with Loop for use in its packaging across Western Europe by 2020. This will allow for the acceleration and increased use of recycled content in plastic bottles.

The Coca-Cola Company, as part of its global 'World Without Waste' vision, wants to focus on the entire packaging life cycle – from how bottles and cans are designed and made, to how they are recycled and repurposed. This comprehensive plan includes ambitious global goals to (1) create packaging made of at least 50% recycled material by 2030, while ensuring 100% of its packaging is recyclable by 2025; (2) to collect and recycle a bottle or can for every one the company sells by 2030; and (3) to partner with industry, governments and local communities to tackle packaging waste.

Where?
The Netherlands and global

The solar value loop

As solar photovoltaic (PV) demand continues to soar, PV recycling solutions are needed to ensure today's clean energy solutions do not pose a waste burden on future generations. High-value recycling helps increase the sustainability of PV by recovering energy intensive and valuable materials that can be reused in new panels and other products.

First Solar is committed to high-value recycling and responsible product life cycle management, establishing circular material flows for key components in its technology, starting with raw material sourcing through to end-of-life recycling. By-products of the zinc and copper mining industries are used to manufacture a leading eco-efficient PV technology, which can produce clean and affordable electricity for more than 25 years. First Solar integrates PV panel recycling into its product design in order to maximise material recovery for reuse at the end of a solar panel's useful life.

More than 90% of a First Solar panel can be recovered at end-of-life for reuse in new PV panels and glass products, such as glass containers, bottles, bathroom tiles and fibreglass insulation. The residual 5-10% of the recycled panel scrap not used as secondary raw materials is handled using other responsible waste treatment and disposal techniques. Since 2018, First Solar's routinely operated recycling facilities, such as its site in Germany, generate zero wastewater discharge.

Where?
Germany

> **More than 90%** of a panel can be recovered at end-of-life for reuse in new PV panels and glass products.

First Solar®

Giving well-loved toys a new life

> Hasbro together with TerraCycle® intends to **recycle toys and games** into raw materials that can be used for innovative uses.

Toys connect us, inspire us, comfort us and teach us. Everyone can recall a favourite toy or game that gave endless hours of joy and memories to last a lifetime. Toys tend to have a circular economy all of their own, and are often passed on from generation to generation, reused and sold second-hand.

However, when toys are no longer wanted, rigid safety requirements under the EU Toy Safety Directive make their multiple components difficult to separate and costly to recycle. Therefore, their high-quality and useful materials are lost to the economy.

To address this issue, Hasbro has partnered with TerraCycle® to launch a new, industry-leading toy and game recycling programme. Piloted first in the US, 2019 marks the programme's launch in France and Germany. It is open to all Hasbro toys and games, except for electronic products. Consumers interested in participating can sign up online, collect and box up their Hasbro toys and games and ship them free of charge to be sorted and recycled into new products.

With industry experience in processing so-called 'non-recyclable' products, Hasbro together with TerraCycle® intends to recycle toys and games into raw materials that can be used in the construction of park benches, storage containers and for other innovative uses.

Hasbro's toy recycling programme is the first broad product recycling initiative in the toy sector, underlining the company's longstanding commitment to environmental sustainability and support for a circular economy.

Where?
Brazil, Canada, France, Germany and the US

Circular economy and IT

In 2018, there was an estimated 50 million tonnes of electronic waste worldwide. The continuous drive for digital innovation, alongside enhanced capabilities and efficiencies in terms of energy, leads to high IT-equipment renewals. As such, addressing e-waste, the scarcity of rare materials and legacy hardware pose complex issues for the entire IT sector.

Hewlett Packard Enterprise (HPE) has recognised this and promotes a circular economy approach by offering its customers the ability to return HPE and competitors' products to its Technology Renewal Centres (TRCs). This initiative foresees that HPE products are returned, given a new life or properly recycled. HPE Financial Services has the largest TRCs of any IT manufacturer affiliate and supports its customers in reducing material and energy consumption through extensive asset upcycling. At the heart of this initiative is a drive to extend a product's life by designing for repair, reuse and recyclability.

In 2018, four million units were returned to HPE's TRCs. 89% of these were given a new life and the remaining 11% were recycled, therefore unlocking the remaining value in customers' IT systems and advancing the transition towards a more circular economy. Adhering to the Design for Environment (DfE) principles, HPE products are designed to be easily repaired, upgraded, or reused in order to extend their useful life and minimise their contribution to electronic waste. Due to these efforts, HPE's product portfolio is at least 90% recyclable, with its Gen10 servers up to 99.8% recyclable and its Aruba access points 100% recyclable.

Where?
Scotland

> In 2018, **four million** units were returned to HPE's Technology Renewal Centres. **89%** of these were given a new life and the remaining **11%** were recycled.

Hewlett Packard Enterprise

Recycling on wheels

> By closing material loops through reuse and recycling, manufacturing costs are reduced and the **production of waste is avoided**.

Johnson & Johnson

The production of Active Pharmaceutical Ingredients (APIs) is a material intensive activity, due to the volume of raw materials and chemicals used. In the past these were difficult to discard. However, plant on a truck from Johnson & Johnson can close material loops and recycle specific chemicals (eg, a catalyst) in order to maintain their value.

Plant on a Truck is a mobile innovative installation, limited to three containers, that treats liquid waste streams from the production of canagliflozin (API of InvokanaTM) in a cost-effective and environmentally sustainable way. The plant enables extraction of the catalyst zinc and recycles it at a partnering metallurgy company, while the rest of the wastewater is treated at the Janssen Supply Chain, a business unit of Johnson & Johnson water treatment plant in Geel, Belgium.

This installation is a result of open collaboration and innovation between several actors: Catalisti, a Belgian business incubator, a local university, a start-up company and a cross-functional team at the Janssen Supply Chain in Geel. By closing material loops through reuse and recycling, manufacturing costs are reduced and the production of waste is avoided. Indirect effects include reduced emissions of CO_2 and road transport. Further assessments of Plant on a Truck are looking at treating additional waste streams, such as waste layers remaining from the production of abiraterone (API of Zytiga®).

Where?
Belgium

Circular steam project

The EU is committed to achieving significant reductions in greenhouse gas (GHG) emissions by 2030. To attain these goals, LyondellBasell, one of the world's largest producers of plastics and chemicals, developed an innovative technology to promote a sustainable and circular reduction of emissions in the chemical industry.

The Circular Steam Project incorporates an innovative technology into the existing production plant to convert its water-based waste into energy. LyondellBasell's new waste-to-energy process divides the waste into two streams. After being treated biologically, the first stream yields water and bio-gas. The second stream enters an innovative dry incineration process which keeps the salts separated and results in steam that is then used in the on-site production process. Reusing the energy for wastewater cleaning to generate steam reduces the dependency on steam currently only generated with fossil fuels.

By converting waste into energy, the new installation will take the existing production process to a higher level of efficiency and sustainability and lead to an overall annual reduction of 140,000 tonnes of CO_2 emissions, 0.9 petajoules of energy and avoid the release of 11 million kilograms of salt residue into the surface water. This is equivalent to avoiding the CO_2 emissions of 31,000 cars and conserving the energy of almost 90,000 households every year.

This technology can be adapted to other production processes and has enormous potential for developing the circular economy helping mitigate climate change.

Where?
The Netherlands

> This is equivalent to avoiding the CO_2 emissions of **31,000** cars and conserving the energy of almost **90,000** households every year.

lyondellbasell

Leading on pet food recycling

> Europe's first pet food recycling programme, offering free solutions to pet owners to **recycle packaging** and give it a second life.

MARS incorporated

Pet food packaging has been traditionally difficult to recycle due to its design for an increased product lifespan and remaining food residues. This, together with difficulties around the separation of waste, remains a critical issue that has meant recycling or reuse of pet food packaging has not been possible.

Mars and TerraCycle® have launched Europe's first pet food recycling programme, offering free solutions to pet owners to recycle packaging and give it a second life. In the UK, consumers can now return their packaging at designated public drop-off locations. Once collected, the packaging is sorted, cleaned and shredded. Food residues are also composted and the remaining material is turned into small plastic pellets. These can then be converted into a whole new range of useful plastic items, such as fence posts or construction applications.

The pet food recycling programme in the UK is key in achieving Mars' commitment to 100% recyclable packaging by 2025. Cooperation with industry partners is critical to achieving this goal. The use of high-quality packaging that extends a product's lifespan and is fully recyclable is essential for limiting harm to the environment.

Where?
United Kingdom

Services

Supporting food packaging that is designed for recyclability

Pack Studios is an innovative network of experts at cutting-edge testing facilities that finds **solutions to modern challenges**.

Dow is working with partners in the value chain to design plastic packaging that is circular from its very inception. Modern food packaging is usually made of many different layers using a combination of materials. Each layer adds specific functionalities, such as stiffness, hermeticity (airtight) or food safety at different stages of the product's life. All of these factors are essential for modern packaging and their advantages for consumers, but it also means that recycling becomes more difficult.

Dow is addressing this issue through its Pack Studios, a collaborative platform for machine manufacturers, converters and consumer goods companies. Pack Studios and its partners in Italy, Spain and Switzerland have been developing an innovative form of polyethylene (PE) resins for flexible and recyclable packaging. The key is to use film layers that are entirely made of recyclable polyethylene, while at the same time ensuring similar functionalities as traditional packaging structures.

Pack Studios is an innovative network of experts at cutting-edge testing facilities that finds solutions to modern challenges. Every year it amasses more than 600 business engagements worldwide in order to make the circular economy in plastics packaging a reality.

Where?
Italy, Spain and Switzerland

Smart water management

The disconnect between market price and water scarcity makes it difficult for businesses to understand the full value of water for their operations. This also makes it challenging to consider water-related risks in business planning. This is evidenced by only two-thirds of European companies identifying water as a substantive business risk.

Nalco Water, an Ecolab company, has partnered with Microsoft to create a financial modelling tool, the Water Risk Monetizer. This free online tool provides a risk-adjusted price for incoming and outgoing water at a facility, enabling businesses to factor current and future water risks into growth, while ensuring the continued availability of this crucial resource. The tool also helps quantify the economic impacts of water availability and quality, while supporting decision-making on water consumption. Understanding the full value of water is an effective starting point for establishing a link between effective water management and its potential for the circular economy.

Using reused or recycled water provides in excess of 20% overall water savings with reductions as high as 80% when used instead of a freshwater potable supply in water-intensive systems. Microsoft has used the tool in its data centre in San Antonio, Texas to reduce their overall operating costs and water usage. This has saved over $140,000 in water costs and reduced water consumption by 220.7 million litres of potable water per year. This demonstrates the value of holistic approaches to water saving strategies that reduce consumption and reuse key resources.

Where?
EU, US and global

> Using reused or recycled water provides in excess of **20% overall water savings** with reductions as high as 80% also possible.

ECOLAB®

Example from Nalco Water

Changing printing from a product to a service

> Instant Ink not only reduces the carbon footprint of ink cartridge purchases and disposal by **84%**, but also reduces energy use by **86%** and water use by **89%**.

HP Instant Ink shows how innovation in product delivery improves environmental performance and contributes to the circular economy. With the products' use and later disposal in mind, HP Inc. aims to introduce an innovative approach that reduces energy and waste by turning products into a service.

Instant Ink is a web-based subscription service that ensures that consumers and businesses do not run out of ink. Based on flexible monthly service plans that take into consideration the number of printed pages, customers are sent new ink when existing supplies are running low. The divergence in the reliability and quality of postal services in each country however remains an issue.

By offering a service that ensures printer cartridges are circular, this service decreases the environmental impact of printing. Based on ISO standard and peer-reviewed lifecycle-analysis, Instant Ink not only reduces the carbon footprint of ink cartridge purchases and disposal by 84%, but also reduces energy use by 86% and water use by 89%. Through the return of empty cartridges in prepaid envelopes, HP Inc. is also able to close the product loop and reduce material consumption by 57% per printed page. This service significantly contributes to the circular economy in the EU, while increasing convenience and decreasing costs for consumers.

Where?
18 countries globally (16 in the EU)

Closing the Loop on packaging waste

The disposal of single-use plastics and the reduction of waste has been a major environmental challenge for policy-makers, industry and consumers. 40% of plastic packaging is often used just once. To address this challenge, TerraCycle®, a global recycling leader, convened a coalition of consumer-packaged goods and delivery companies, the Coca-Cola Company, Mars Petcare and UPS, to address waste and eliminate the need for single-use packaging.

Announced at the World Economic Forum in January 2019, Loop is the first fully circular shopping platform that offers everyday products from major brands in reusable and returnable packaging. Products are delivered in a durable reusable tote which has been tested by packaging experts at UPS's Package Design and Test Lab. Once empty, packaging is picked up, cleaned and refilled in a breakthrough zero-waste delivery system. Loop, leveraging all of its brand partners' expertise, is making shopping easy, convenient and plastic-free for consumers.

Loop cleans and sanitises empty containers and prepares them for reuse, instead of the traditional product packaging which ends up as waste. Through a reimagination of shopping, where single-use disposable packaging gives way to durable and feature-packed designs, Loop and its partner brands are changing the waste equation. Loop is currently being piloted in the mid-Atlantic US and Paris, France, with plans to expand to other European and US cities in 2020.

Where?
Europe and global

> Loop is the first fully circular shopping platform that offers everyday products from major brands in **reusable and returnable packaging**.

Recommendations

Recommendations

Since the introduction of the Circular Economy Action Plan in 2015, the EU has taken significant steps to reduce waste and improve the sustainability of products. The 15 innovative practices in this brochure demonstrate that business has a key role to play in building Europe's circular economy. While considerable efforts have already been made, more can be done to ensure that it benefits everyone, from businesses and consumers to the surrounding environment.

For a successful circular economy in the EU, policy-makers need to:

- **Encourage cooperation between governments, industry and civil society to achieve circularity in products and services at every stage of their lifecycle.** No actor can solve today's environmental challenges alone, therefore a clear and consistent regulatory framework is needed to support collaboration across all levels of the value chain;

- **Support innovative approaches for an efficient and responsible use of resources.** To grow the circular economy, promising and innovative solutions that can protect finite resources and encourage recycling practices need to be funded;

- **Support models and practices that expand the useful life of products:**

    - **Encourage remanufactured goods that are made to last**, remaining viable for 'multiple lives' continuing to deliver performance. Too often such goods are constrained by regulations adopted decades ago with a linear approach in mind;

    - **Apply life cycle thinking when assessing circular economy options**, to ensure the best environmental outcome;

    - **Leverage the potential of professional reuse, repair and refurbishment**, so that circular products maintain their quality and safety;

    - **Facilitate the circular economy for used components, parts and products**, allowing the cross-border movement of these goods to professional repair facilities;

- **Promote regulatory action that ensures large-scale availability of economically competitive secondary raw materials, for the relevant waste streams, enabled by intra-EU waste shipments.** Incentivising market supply and demand for recycled waste materials or the harmonisation of end-of-waste definitions will encourage the use of secondary raw materials in consumer products;

- **Ensure legislation for a circular economy**, instilling a sector-specific approach that takes into consideration different specifications and customer product needs will allow the European market to remain competitive;
    - **Support the modernisation and economic development of waste collection**, using common standards and technology for identification to enhance the sorting of materials;
    - **Make waste management a valuable business case for all stakeholders**, if waste collection, separation and repurposing is not economically viable, then the circular economy cannot happen;
    - **Improve waste infrastructure and collection of waste** (eg, through funding);
- **Promote educational consumer campaigns;**
- **Consider the environmental performance of manufacturing processes and products in public procurement decisions.** National and EU-level Green Public Procurement (GPP) practices possess enormous potential to incentivise innovation and environmentally friendly purchasing; and
- **Provide market surveillance and law enforcement authorities with sufficient capabilities to enforce product regulations and environmental standards**, to prevent non-compliant products and companies entering the EU market.

Game-changing and environmentally progressive ideas cannot stand alone. Best management practices need to accompany the development of efficient recycling systems to pave the way for future innovations. A successful transition to a fully circular economy in the EU will not only foster environmentally friendly practices, but also boost growth and jobs through novel business models.

The examples featured in this brochure demonstrate the commitment from companies to protect the planet. The more we push for a regulatory environment in which these sorts of products, processes and services are possible, the greater chance we have of securing a circular economy not only in Europe, but also across the Atlantic and around the globe.

Call for input on the task of ECHA to develop a database on articles containing Candidate List substances under the Waste Framework Directive

ECHA will establish a new database on the presence of Candidate List substances, i.e. substances of very high concern, in articles. The primary users of the database are the waste treatment operators and consumers. The database will contain information submitted by companies producing, importing or supplying articles that contain Candidate List substances. Companies need to submit this information for articles placed on the market from 5 January 2021.

The task is based on the revised Waste Framework Directive that entered into force in July 2018. It is part of the EU's waste legislation package, contributing to the EU's circular economy policy. This new task strengthens the need for good supply chain communication as foreseen under REACH, where companies have to communicate in the supply chain and notify ECHA about Candidate List substances in articles.

Call for input

ECHA has developed a draft scenario for the database and would now like to consult its stakeholders on this draft scenario and its implications. The results of this call will be presented and discussed at a workshop in Helsinki on 22-23 October 2018. Individual responses to the received comments will not be provided.

Please find the draft scenario under Background documents, and give us your feedback on the questions below **by Tuesday 9 October 2018 at the latest**.

Compulsory fields/tick boxes are marked with an asterisk (*)

Questions

1. **Article-centric approach***

ECHA proposes a "article-centric approach" to implement the new notification obligations under the Waste Framework Directive. Do you find this as an appropriate way forward?

AmCham EU understands the obligation to fulfil the revised Waste Framework Directive on creating a database, however there are some concerns about the "article-centric approach" that ECHA is proposing. Such an approach could be overly complex and add a heavy burden on article manufacturers without bringing the hoped benefit for waste operators. There is a need for a full impact assessment on any new database that is set-up, so as to make sure that the cost-effectiveness and practicality are measured. Moreover, the proposed approach prejudges the outcome of the work being carried out on the Interface between Chemicals Products and Waste, as well as any decisions that will follow.

ECHA's proposal goes beyond the legal basis provided for in Article 9(1)(i) and Article 9(2) of the Waste Framework Directive, which requires article suppliers to provide information pursuant to Article 33(1) of the REACH Regulation. The approach for the new notification obligations under the Waste Framework Directive should not oblige the suppliers of articles to submit more information than that that is required by the legislation. The Waste Framework Directive requests that "any supplier of an article as defined in point 33 of Article 3 of Regulation (EC) No 1907/2006 of the European Parliament and of the Council (*5) provides the information pursuant to Article 33(1) of that Regulation to the European Chemicals Agency as from 5 January 2021". Moreover, REACH Article 33(1) states: "Any supplier of an article containing a substance meeting the criteria in Article 57 and identified in accordance with Article 59(1) in a concentration above 0,1 % weight by weight (w/w) shall provide the recipient of the article with sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substance".

Therefore, the obligations should be restricted to the safe use information and as a minimum, the name of the substance if requested. Safe use is until now understood as providing Risk Management Measures and Handling Instruction in case there is a risk of exposure or release of the substance from the article during its life cycle stages. There is nothing in the wording of Art 33 (1) that requests to submit article use information as requested for the article notification according to REACH Art 7 (4). The article neither requires producers to provide the SVHC substance concentration. This could form part of the risk assessment, but any risk assessment should be done separately and not as part of the database. Only the safe use information should be communicated in the database, if necessary. For the same reasons, the Unique Identifier concept does not pose an effective solution. Industry rather than ECHA should lead on developing standardised statements for safe use.

New data input obligation should be built around existing state of the art configuration standards and the practical management of article supply chains, including issues relating to as-designed, as-built, as-maintained configurations, and the management of multiple sourced standard parts supplies. AmCham EU would be ready to collaborate with other industries to provide input on how such an information gathering exercise could work.

2. Challenges*
What would be, in your view, the main challenges to implement the proposed scenario?

As explained above, the proposed scenario goes beyond what is required by REACH Article 33(1). Notably, there is no requirement for a detailed description of the article (characteristics, composition and uses) and whereas some elements may be relevant for waste management (e.g. on materials used), others (e.g. uses) are unlikely to provide useful information to waste treatment operators. Regarding safe use information, this is not the place to develop standardised statements. It should be up to the supplier of the article to find the best way to communicate safe use information. REACH also does not require the article supplier to specify the concentration (range) of the substance in the article.

The introduction of a Unique Identifier generated by ECHA, which should be used as reference in other notifications of the notifying company, as well as other companies in the supply chain, raises several concerns regarding record keeping and supply chain communications. Such an approach would create a far more data intensive and inflexible system for managing component articles and complex object manufacturing, assembly, supply and in-service support than is currently the case. The consequences of introducing ECHA's proposals would potentially damage the agility of industry to adapt to market needs, thereby impacting the EU competitiveness and long term economic output, aside from costs of IT, data, processes and training implementations. Confidential business and supply chain information like tradenames or suppliers of parts should be protected and should not become publicly available through the system of Unique Identifier generation, communication and referencing. Complex articles manufactured outside the EU will contain articles from supply chains outside the EU. It is not indicated how article referencing could be performed for such articles which would not have records in the database.

The protection of confidential business information needs to be taken into account in such a database. Article 9(2) WFD does not require making the information in the database publicly available. The article states that ECHA shall provide access to the database to waste treatment operators, and to consumers upon request. Suppliers and the materials they use are often confidential and not covered by the information pursuant to Article 33(1). It will be impossible to protect confidential business information if ECHA intends to make "all data received on articles publicly available".

Duty holders (article suppliers)

3. The legal text requires any supplier of an article containing a Candidate List substance to notify ECHA. Are there needs and practical means to tailor the notification system for the different roles in supply chains? (see paragraph Who are the duty holders? under section 3 of the "Draft scenario for a database on Candidate List substances in articles")*

As described above, it is important that confidential business information needs to be taken into account, including supply chain relationships between manufactures.

4. Data submitter needs*
Do data submitters have specific needs, which the Agency would have to take into account when designing the database and its data submission interface?

As explained above, it will be critical that confidential business information is sufficiently protected. Moreover, the administrative burden for article suppliers should be proportionate to the obtained benefits. ECHA should consider options to use synergies and increase efficiency for concerned companies through the grouping of products (e.g. by product line), shared notifications (e.g. by affiliates and associated companies), as well as automated bulk upload of notifications. The system should be compatible with existing standards that are being used by industry. The REACH-IT system currently only allows to upload 1 notification at a time (for notification under REACH Article 7(2)). Any system used for the new Waste Framework Directive database should ensure that multiple notifications can be submitted at once, to keep the system manageable for companies. A solution requiring manual input for thousands of products or millions of articles would be unacceptable and disproportionate.

Users of the database (waste operators and consumers)

5. User needs*
Do the expected users of the database have specific user needs, which the Agency would have to take into account when designing the database and its dissemination?

The information provided in the database should be meaningful for the recipients. There are concerns, in particular with the proposed approach, whether this high level of detailed information collected will also be of value to waste operators. While the Interface between Chemicals, Products and Waste should address legacy substances, something that most waste operators will likely be interested in, it will not be ready in time for the proposal of the database.

6. Information requirements*
Besides the substance name, which additional information should be submitted to support safe use and end-of-life stage of articles?

The substance name is the only information to be provided. Other information need to be provided only where there is a proven risk, not for each substance. There should be no overlap with existing practices or end of life legislation requirements (such as WEEE Directive Art. 15 information)

Any further comments?

7. Are there any further comments or feedback you would like to share with ECHA on the draft scenario?
If useful, you may also submit further supportive documents:

AmCham EU believes that the information needs that the database is trying to address, should not be introduced within the context of the waste directive. If there is a need for more information on substances in articles, chemicals legislation solutions that are based on industry consultations and a full impact assessments, would be much better suited to deal with this. The new requirement in the Waste Framework Directive follows a last-minute amendment of the legal text of the Waste Framework Directive. There has been no assessment of the anticipated impact of such a potentially very burdensome requirement for industry. Therefore it is all the more important that a database proposal based on this new requirement should strictly reflect the legal text and not go beyond what legislators have agreed.

Joint Statement from 68 Packaging Value Chain associations on the Proposal for a Directive on the Reduction of the impact of certain plastic products on the environment

August 2018

The undersigned organisations[1] represent a wide range of packaging materials, including plastics, and sectors at different stages of the packaging value chain in Europe. We wish to express our reservations about the unprecedented pace at which this proposal has been developed and intends to be adopted, which may impact the overall quality of the adopted Directive. We are also concerned that fundamental policy principles for Better Regulation, which ensure an efficient transition to a Circular Economy are not reflected in the Commission's proposal, as illustrated in the below recommendations. We acknowledge the problem of plastic pollution and are committed to finding solutions. To this end, our common overarching objectives as value chain partners are to ensure that:

- A coherent EU policy framework for packaging is maintained, and the Internal Market for packaged goods is safeguarded by avoiding various differing legal interpretations at EU and national level.
- The Directive addresses the root causes of marine litter holistically, incentivises meaningful innovation and interventions and allows sufficient development time from R&D to commercialisation.
- Policies and legislation contain clear definitions and are based on a complete, evidence-based impact assessment of the implications, to avoid possible unintended consequences.
- Policy measures are non-discriminatory and proportionate to the challenges addressed.

Therefore, we have the following recommendations, accompanied by specific suggestions for amendments (see Annex):

RECOMMENDATIONS

1. **Provide legal certainty and avoid the fragmentation of packaging policy and its impacts:** The Packaging and Packaging Waste Directive (PPWD) is the main piece of legislation governing packaging and packaging waste in Europe. By including some packaging items within its scope, the proposal on Single Use Plastics (SUP) introduces legal uncertainty for Member States and adds compliance complexity for businesses. The PPWD has Article 114 TFEU on Internal Market as its legal base to protect the free circulation of packaged goods in the EU while continuously improving the environmental performance of packaging. However, the SUP proposal has Article 192 TFEU on Environmental Protection as its legal base. Hence, **we urge EU**

[1] Co-signatories support the principles of this joint industry statement without prejudice to divergent national interpretations of EU law. This joint statement captures the main points our associations share and does not preclude the undersigned organisations from issuing individual positions that are more focused on their specific sectors.

policy-makers to clarify that the PPWD remains the overriding *lex specialis* for the packaging items covered within the scope of the SUP proposal.

2. **Safeguard the Internal Market for packaging, including single-use plastic packaging, and packaged products:** The Internal Market is a cornerstone of the EU's global competitiveness. While the proposal's objective is partially to contribute "*to the efficient functioning of the internal market*", the requirement for Member States to take "*necessary measures"* to reduce the consumption of certain single-use products (Article 4) risks creating a proliferation of potentially 27 different measures. This would also be the case for marking requirement measures (Article 7), which could diverge between Member States. These risks are exacerbated by proposing Article 192 TFEU (environmental protection) as legal base for the Single Use Plastics Directive. This potential for fragmentation is acknowledged in the Commission's explanatory memorandum as a possible *"risk of market fragmentation when Member States take measures in an uncoordinated manner*." **Therefore, we call on the European Parliament and Council to introduce an amendment to Article 4 on Consumption Reduction and Article 17 on Transposition to ensure that they are without prejudice to PPWD Article 16 on Notification and Article 18[2] on Freedom to place on the market.**

3. **Ensure a closed product list:** The possibility for Member States to add additional products to the lists in the annex during transposition creates legal uncertainty and risks leading to distortive consequences for the Internal Market in the implementation of the Directive at national level. **To support a harmonised approach at EU level, we call on the European Parliament and the Council to provide a closed, well-defined product list that cannot be interpreted differently or extended individually by Member States.**

4. **Clarify the scope of the Directive with clearer definitions:** Many of the definitions in Article 3 need to be further clarified, such as for "plastic" and "single-use", and some additional definitions should be introduced, such as for "beverage cups" "food containers", "beverages" and "packets and wrappers". If this requirement is not removed all together, "litter clean-up" should be defined as well. **We advocate for clearer definitions and will work constructively with the EU institutions to clarify these definitions in order to provide legal clarity and avoid different interpretations at EU and national level.**

5. **Avoid making litter clean-up and prevention the sole responsibility of producers:** As recognised in the revised WFD[3], the root causes of litter are poor solid waste management practices and infrastructure, littering by citizens and lack of public awareness. Producers are doing their share to tackle these problems by financing EPR schemes to strengthen the re-use, prevention, recycling and other recovery of waste[4], investing in litter awareness-raising campaigns[5] to encourage responsible disposal and investing in eco-innovation in packaging design. However, producers do not have the levers to solve the litter problem alone. Other involved

[2] Article 18 of Directive 94/62/EC on Freedom to place on the market: *"Member States shall not impede the placing on the market of their territory of packaging which satisfies the provisions of this Directive."*

[3] Recital 35 of the revised Waste Framework Directive

[4] As per Article 8 of the Waste Framework Directive (WFD)

[5] Gestes Propres, Tidyman (a Keep Britain Tidy initiative), An Taisce in Ireland, Indevuibak and BeWaPP in Belgium, LIBERO and Paisaje Limpio in Spain, and the global *litter less* campaign under the Eco-Schools programme run by a consortium of public and private partners including UNEP and UNESCO.

stakeholders, including private or public waste operators and local authorities[6], need to take action to improve waste management systems and infrastructure, including sewage systems, to carry out educational programmes and to enforce anti-littering laws and EU wastewater legislation. Citizens have a behavioural role as well. **We call on the European Parliament and Council to remove the extension of EPR financial obligations to litter clean-up costs as the sole responsibility of producers (Article 8), especially given the critical role of other actors in addressing the root causes of littering**.

6. **Introduce harmonised boundary conditions to ensure proportionate and non-discriminatory measures:** Before introducing bans on products (Article 5), Member States should be required to assess the appropriateness of a ban versus other measures, such as voluntary agreements and public-private partnerships to ensure proportionality. They should verify the presence of fit-for-purpose, safe, affordable and readily available at industry scale alternatives and conduct a thorough impact assessment of the social, economic and environmental impacts of a ban – including how the efficient functioning of the Internal Market would be impacted. Only fully assessed measures can ensure the highest efficiency and effectiveness to tackle problems that urgently need to be solved. Accordingly, any notification of member state draft measures under Article 16 of the PPWD in respect of single use plastics products must be accompanied by an impact assessment. **We call on the European Parliament and Council to introduce certain harmonised boundary conditions to ensure that market restrictions under Article 5 of the proposal, and measures listed under Article 4 on Consumption Reduction are proportionate and non-discriminatory.**

7. **Ensure a holistic, life-cycle approach:** It is essential to ensure that substituting plastic packaging with other packaging materials results in a net environmental improvement, by taking into account the full life-cycle of the individual product and packaging along the supply chain, including all end-of-life aspects. It is also important to ensure the functionality of packaging and the critical role it plays in delivering high standards of food hygiene, food safety, public health and consumer protection[7]. Industry needs sufficient flexibility to design packaging system (primary, secondary and tertiary) to best meet the functional requirements for the product concerned and its related supply chain, based on a case-by case approach. Otherwise, legislation may affect the functionality of packaging and its role in preventing waste, the pack's compliance with EU rules on food contact materials, and the ability of companies to innovate and make supply chains more sustainable from a life-cycle perspective. **We call on the European Parliament and Council to ensure that the EU's high standards of consumer protection, notably but not limited to those enshrined in Union law, are not compromised, and that the same level of protection is applied in all Member States**.

8. **Address packaging design requirements only in the PPWD:** We are concerned about the proposed packaging design requirements in Article 6 and market restrictions that impact packaging in Article 5. The undersigned organisations whose products and/or materials and/or systems are targeted in the proposal will work constructively with the Parliament and Council to improve Articles 5 and 6. **To ensure legal clarity, the Essential Requirements in the PPWD should remain the only legal provision containing eco-design requirements for packaging.**

[6] As per Article 8a(1a) of the revised Waste Framework Directive
[7] See the position papers of the undersigned organisations for specific examples

9. **Fully assess the implications of proposed measures:** There are several uncertainties about the impact of some of the proposed measures, which are not addressed in the Commission's impact assessment. Examples include the scope and cost of litter clean-up for producers across Europe; the efficiency of requiring specific producers to pay for litter clean-up versus other possible measures, and the effect that a 90% separate collection target for bottles would have on the environment and the functioning of EPR schemes if implemented through deposits and separate collection targets for EPR schemes**. We urge the European Parliament and Council to thoroughly assess the impact of all the proposed measures and ensure they are supported by an evidence-based and complete impact assessment**.

Brussels, August 2018

The undersigned organisations are as follows (in alphabetical order):

Signatories without an asterisk have co-signed the above principles and the amendments in the below Annex. Signatories with an asterisk have co-signed the above principles.

ACE - The Alliance for Beverage Cartons and the Environment

Afvalfonds Verpakkingen, The Netherlands

AGVU - Arbeitsgemeinschaft Verpackung und Umwelt e.V., Germany

AIM - European Brands Association

A.I.S.E. - The International Association for Soaps, Detergents and Maintenance Products

AmCham EU - American Chamber of Commerce to the European Union

ANIA - Association Nationale des Industries Alimentaires, France

APIAM -Associação Portuguesa dos Industriais de Águas Minerais Naturais e de Nascente, Portugal

ARAM - Association for Packaging and the Environment, Romania

BVE - Bundesvereinigung der Deutschen Ernährungsindustrie e.V, Germany

BSDA- Bulgarian Soft Drink Association, Bulgaria

CEPI - Confederation of European Paper Industries

CICPEN - Industrial Coalition on Packaging and the Environment, Czech Republic

CITEO- Packaging Recovery Association, France

CNE - Conseil National de l'Emballage, France

Coop de France Métiers du Lait, France

COPACEL, France

Cosmetics Europe - The Personal Care Association

DSD - Der Grüne Punkt Dual System for Packaging Recycling, Germany

Eco-Rom Ambalaje, Packaging Compliance Scheme, Romania

EDANA - The voice of European nonwovens industry

EFBW - European Federation of Bottled Waters

Eko-kom - Packaging Compliance Scheme, Czech Republic

Ekopak, Bosnia and Herzegovina

ELIPSO - Les entreprises de l'emballage plastique et souple, France

Emballasjeforeningen- The Norwegian Packaging Association, Norway

EPRO - European Association of Plastics Recycling & Recovery Organisations

	EuPC - European Plastics Converters
	European Aluminium
	European Aluminium Foil Association
	European Bioplastics
	European Dairy Association
	European Vending & Coffee Service Association
	EUROPEN - The European Organization for Packaging and the Environment
	EXPRA - Extended Producer Responsibility Alliance
	FEA - European Aerosol Federation
	FEBEA - Fédération des Entreprises de la Beauté, France
	FIAB- Spanish Food & Drink Federation, Spain
	Flexible Packaging Europe
	FNIL- Fédération Nationale des Industries Laitières, France
	FoodDrinkEurope - The organisation of Europe's food & drink industry
	Fost Plus, Belgium
	GIFLEX - Italian association of flexible packaging producers, Italy
	Green Dot Cyprus, Cyprus

HE.R.R. Co, Hellenic Recovery Recycling Corporation, Greece

Hungarian Mineral Water, Fruit Juice and Softdrink Association, Hungary

IK Industrievereinigung Kunststoffverpackungen e.V, Germany

Industrieverband Körperpflege- und Waschmittel e. V., Germany

ILEC - Institut de liaisons et d'études des industries de consommation, France

INCPEN - The Industry Council For Research On Packaging And The Environment, UK

INTERGRAF - European Federation for Print and Digital Communication

KLF- The Norwegian Cosmetics Association, Norway

Kosmetik- och Hygienföretagen, Sweden

Miljöpack – The Trade & Industry Group, Sweden

Pack2Go Europe - Europe's Convenience Food Packaging Association*

Pakkaus - Packaging Association, Finland

PlasticsEurope - Association of Plastics Manufacturers

Polski Związek Przemysłu Kosmetycznego, Poland

Potravinářská komora České republiky- Federation of the Food and Drink Industries of the Czech Republic, Czech Republic

PROsPA- Producer Responsibility Organisations Packaging Alliance

REPAK - Packaging Recovery Organisation, Ireland

SEPEN- Association for Packaging and Environmental Protection, Serbia

SLICPEN - Industrial Coalition on Packaging and the Environment, Slovakia

STANPA- Asociacion Nacional de Perfumería y Cosmética, Spain

Teknokemian Yhdistys, Finland

The Danish Association of Cosmetics and Detergents, Denmark

UNESDA - Union of European Soft Drinks Associations

Valpak - Environmental Compliance, Recycling and Sustainability Solutions, UK

ANNEX - SUGGESTED AMENDMENTS[8]

1. **Provide legal certainty and avoid the fragmentation of packaging policy and its impacts**

The following amendments seek to clarify the legal status of single-use plastic products that are considered packaging in this proposed Directive vis-à-vis the Packaging and Packaging Waste Directive.

Commission Proposal	Suggested Amendment
Preamble	Preamble
Having regard to the Treaty on the Functioning of the European Union, and in particular Article 192(1) thereof,	Having regard to the Treaty on the Functioning of the European Union, and in particular Article 192(1) thereof ***and Article 114 in so far as packaging as defined under Article 3(1) of Directive 94/62/EC is concerned***,

Commission Proposal	Suggested Amendment
Recital 10	Recital 10
The single-use plastic products should be addressed by one or several measures, depending on various factors, such as the availability of suitable and more sustainable alternatives, the feasibility to change consumption patterns, and the extent to which they are already covered by existing Union legislation.	The single-use plastic products should be addressed by one or several measures, depending on various factors, such as the availability of suitable and more sustainable alternatives, the feasibility to change consumption patterns, and the extent to which they are already covered by existing Union legislation. ***This Directive is without prejudice to the provisions established in Directive 94/62/EC regarding single-use plastic products that are considered packaging items as defined by Article 3(1) therein***.

2. **Safeguard the Internal Market for packaging, including single-use plastic packaging, and packaged products**

The following amendments will ensure that Articles 16 (Notification) and 18 (Freedom to place on the market) of the Packaging and Packaging Waste Directive (94/62/EC) are not compromised.

Commission Proposal	Suggested Amendment
	Recital 26 (new)

[8] This does not preclude the co-signatories from making additional suggestions for amendments to these and other articles to address sector-specific concerns.

	Whereas Member States should, in accordance with Directive 2015/1535, notify the Commission of drafts of any measures they intend to adopt related to packaging before adopting them, so that it can be established whether they may create barriers to trade and distort competition in the Union.

Commission Proposal	Suggested Amendment
Article 17 Paragraph 2	Article 17 Paragraph 2
2. Member States shall communicate to the Commission the text of the main provisions of national law which they adopt in the field covered by this Directive.	2. Member States shall communicate to the Commission the text of the main provisions of national law which they adopt in the field covered by this Directive. ***In accordance with Directive 2015/1535, when such measures pertain to items considered 'packaging' as defined in Directive 94/62/EC, Member States shall notify the drafts of these measures to the Commission before adoption to permit the latter to examine them in light of the functioning of the Internal Market following the procedure under the above Directive.***

Commission Proposal	Suggested Amendment
Article 4 Consumption Reduction Paragraph 1, first indent	Article 4 Consumption Reduction Paragraph 1, first indent
Member States shall take the necessary measures to achieve a significant reduction in the consumption of the single-use plastic products listed in Part A of the Annex on their territory by … [*six years after the end-date for transposition of this Directive*].	***Without prejudice to Article 18 of Directive 94/62/EC,*** Member States shall take the necessary measures to achieve a significant reduction in the consumption of the single-use plastic products listed in Part A of the Annex on their territory by … [*six years after the end-date for transposition of this Directive*].

3. Ensure a closed product list

These amendments would ensure that the lists in the annex focus on the 10 most found single-use plastic products and cannot be extended to additional products when implemented at national level, as doing so would create barriers to trade and distort competition in the Union.

Commission Proposal	Suggested Amendment
Recital 7	Recital 7
To focus efforts where they are most needed, this Directive should only cover the most found single-use plastics products, which are estimated to represent around 86% of the single-use plastics found, in counts, on beaches in the Union.	To focus efforts where they are most needed, this Directive should only cover the ***10*** most found single-use plastics products, which are estimated to represent around 86% of the single-use plastics found, in counts, on beaches in the Union.

Commission Proposal	Suggested Amendment
Article 2 Scope	Article 2 Scope
This Directive shall apply to the single-use plastic products listed in the Annex and to fishing gear containing plastic.	This Directive shall ***only*** apply to the single-use plastic products listed in the Annex ***of this Directive*** and to fishing gear containing plastic. ***The same lists in the Annex of this Directive shall apply in all Member States and shall only be modified by revision of this Directive.***

4. Avoid making litter clean-up and prevention the sole responsibility of producers

Given the critical role of other actors involved in waste management in overcoming the problems of poor solid waste management practices and infrastructure, littering by citizens and lack of public awareness, producers cannot be solely responsible for litter clean-up.

Commission Proposal	Suggested Amendment
Recital 15	Recital 15
With regard to single-use plastic products for which there are no readily available suitable and more sustainable alternatives, Member States should, in line with the polluter pays principle, also introduce extended producer responsibility schemes to cover the costs of waste management ***and clean-up of litter*** as well as the costs of awareness-raising measures to prevent and reduce such litter.	With regard to single-use plastic products for which there are no readily available suitable and more sustainable alternatives, Member States should, in line with the polluter pays principle, also introduce extended producer responsibility schemes to cover the costs of waste management ~~***and clean-up of litter***~~ as well as the costs of awareness-raising measures to prevent and reduce such litter.

Commission Proposal	Suggested Amendment

Recital 19	Recital 19
(19) Directive 2008/98/EC lays down general minimum requirements for extended producer responsibility schemes. Those requirements should apply to extended producer responsibility schemes established by this Directive. ***This Directive, however, establishes additional extended producer responsibility requirements, for example, the requirement on producers of certain single-use plastic products to cover the costs of clean-up of litter.***	(19) Directive 2008/98/EC lays down general minimum requirements for extended producer responsibility schemes. Those requirements should apply to extended producer responsibility schemes established by this Directive. ***~~This Directive, however, establishes additional extended producer responsibility requirements, for example, the requirement on producers of certain single-use plastic products to cover the costs of clean-up of litter.~~***

Commission Proposal	Suggested Amendment
Article 8 Extended producer responsibility Paragraph 2	Article 8 Extended producer responsibility Paragraph 2
With regard to the schemes established pursuant to paragraph 1, Member States shall ensure that the producers of the single-use plastic products listed in Part E of the Annex shall cover the costs of the collection of waste consisting of those single-use plastic products and its subsequent transport and treatment, ***including the costs to clean up litter*** and the costs of the awareness raising measures referred to in Article 10 regarding those products. For single-use plastic products that are packaging, the requirements laid down in this paragraph supplement the requirements regarding extended producer responsibility schemes laid down in Directive 94/62/EEC and Directive 2008/98/EC.	With regard to the schemes established pursuant to paragraph 1, Member States shall ensure that the producers of the single-use plastic products listed in Part E of the Annex shall cover the costs of the collection of waste consisting of those single-use plastic products and its subsequent transport and treatment, ***~~including the costs to clean up litter~~*** and the costs of the awareness raising measures referred to in Article 10 regarding those products. For single-use plastic products that are packaging, the requirements laid down in this paragraph ***~~supplement~~ are without prejudice to*** the requirements regarding extended producer responsibility schemes laid down in Directive 94/62/EEC and Directive 2008/98/EC.

5. <u>Introduce harmonised boundary conditions to ensure proportionate and non-discriminatory measures</u>

These amendments would help to ensure that measures implemented at national level are proportionate and non-discriminatory by introducing harmonised boundary conditions.

Commission Proposal	Suggested Amendment
Recital 11	Recital 11
For certain single-use plastic products,	For certain single-use plastic products,

suitable and more sustainable alternatives are not yet readily available and the consumption of most such single-use plastic products is expected to increase. To reverse that trend and promote efforts towards more sustainable solutions Member States should be required to take the necessary measures to achieve a significant reduction in the consumption of those products, without compromising food hygiene or food safety, good hygiene practices, good manufacturing practices, consumer information, or traceability requirements set out in Union food legislation.	suitable and more sustainable alternatives are not yet readily available and the consumption of most such single-use plastic products is expected to increase. To reverse that trend and promote efforts towards more sustainable solutions Member States should be required to take the necessary measures, ***without prejudice to article 18 of Directive 94/62/EC,*** to achieve a significant reduction in the consumption of those products, without compromising food hygiene or food safety, good hygiene practices, good manufacturing practices, consumer information, or traceability requirements set out in Union food legislation. ***Prior to adopting such measures, Member States should be required to conduct an assessment of the social, economic and environment impacts to ensure the measures are proportionate and non-discriminatory.***

Commission Proposal	Suggested Amendment
Article 4 Consumption Reduction Paragraph 1, second indent	Article 4 Consumption Reduction Paragraph 1, second indent
Those measures may include national consumption reduction targets, measures ensuring that reusable alternatives to those products are made available at the point of sale to the final consumer, economic instruments such as ensuring that single-use plastic products are not provided free of charge at the point of sale to the final consumer. Those measures may vary depending on the environmental impact of the products referred to in the first subparagraph.	Those measures ***must be proportionate and non-discriminatory.*** They may include national consumption reduction targets, measures ensuring that reusable alternatives to those products are made available at the point of sale to the final consumer, economic instruments such as ensuring that single-use plastic products are not provided free of charge at the point of sale to the final consumer. Those measures may vary depending on the environmental impact of the products referred to in the first subparagraph.

Commission Proposal	Suggested Amendment
Article 4 Consumption reduction Paragraph 1 a (new)	Article 4 Consumption reduction Paragraph 1 a (new)
	1a. Prior to adopting those measures, Member States shall conduct an

	assessment of the social, economic and environmental impacts, including an evaluation of: - ***the presence of a sufficient supply of fit-for-purpose alternatives;*** - ***the environmental impacts of alternative products;*** - ***where applicable, the impacts on food hygiene, food safety, food waste, good hygiene practices, good manufacturing practices, consumer information and traceability requirements in Union food legislation[9];*** - ***the impacts on the Internal Market, international trade agreements, and consumer prices;*** - ***the impact on consumer health and safety, especially child safety;*** - ***the effectiveness of alternative measures, such as voluntary agreements.***

Commission Proposal	Suggested Amendment
Article 5 Restrictions on placing on the market Paragraph 1	Article 5 Restrictions on placing on the market Paragraph 1
Member States shall prohibit the placing on market of the single-use plastic products listed in Part B of the Annex.	Member States shall prohibit the placing on market of the single-use plastic products listed in Part B of the Annex. ***Prior to implementing this measure, Member States shall conduct an assessment of the social, economic and environmental impacts, including an evaluation of the elements listed in Article 4.1a.***

6. Fully assess the implications of proposed measures

Since national packaging waste collection systems vary from one Member State to another, this amendment would help to ensure that each Member State assesses the potential national impact of the effect that a 90% separate collection target for bottles would have on the functioning of EPR schemes and their ability to fulfil the requirements under Article 7 in

[9] Regulation (EC) 178/2002 laying down the general principles and requirements of food law (OJ L 31, 1.2.2002, p.1-24), Regulation (EC) No 852/2004 on the hygiene of foodstuffs (OJ L 139, 30.4.2004, p.1-54), Regulation (EC) No 1935/2004 on materials intended to come into contact and other relevant legislation related to food safety, hygiene and labelling (OJ L 338, 13.11.2004, p.4-17).

the revised PPWD on Return, collection and recovery systems if implemented through deposits and separate collection targets for EPR schemes.

Commission Proposal	Suggested Amendment
Article 9 Second paragraph (new)	Article 9 Second paragraph (new)
-	***Member States shall ensure that those measures are subject to an ex ante assessment with regard to the effects on the functioning of EPR schemes.***