REMISSYTTRANDE

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REMISS AV EU-KOMMISSIONENS FÖRSLAG TILL DIREKTIV OM MINSKNING AV VISSA PLASTPRODUKTERS INVERKAN PÅ MILJÖN

IKEM representerar bland annat plastbranschen i Sverige och bland våra medlemsföretag finns både tillverkare av plastråvaror och plastprodukter.

Plasterna är en viktig del av vårt moderna samhälle och bidrar bland annat till att vi kan minska vår energiåtgång och klimatpåverkan genom lättare förpackningar och transportmedel, mindre matsvinn och bättre isolerade hus. Plasterna bidrar också till innovationer och är viktiga för utvecklingen av förnybara energikällor.

Hela den europeiska plastbranschen anser att nedskräpning, både på land och i vatten, är oacceptabelt och vi har förbundit oss att bidra till att förhindra läckaget av plast till miljön. Många industriinitiativ finns redan på plats och mer information om vårt arbete finns på följande sidor www.marinelittersolutions.com och www.wastefreeoceans.eu. Ett av de pågående projekten är Operation Clean Sweep som har som syfte att undvika spridningen av plastpellets. Där förbinder sig företag som hanterar plastpellets att arbeta aktivt med att förhindra att de sprids, för mer information se https://www.opcleansweep.org/.

Att undvika att plast hamnar i miljön handlar om att sluta våra kretslopp. De viktigaste åtgärderna är att arbeta för en effektiv avfallshantering och medvetenhet hos alla aktörer att inte skräpa ned. Vi anser att det är viktigt att man ser utmaningen som en materialhanteringsfråga och inte som en materialfråga. Att ersätta ett material med ett annat som en lösning på nedskräpning kan lätt göra att man bortser från och förlorar andra viktiga funktioner som ett material har.

I samband med att EU-kommissionen presenterade en strategi för plast i en cirkulär ekonomi i januari lanserade den europeiska plastbranschen två omfattande frivilliga åtaganden för ökad cirkuläritet och resurseffektivitet för plastmaterialet. De två initiativen är:

- **"Plastics 2030 - Voluntary Commitment"**[1] – som plastråvarutillverkarna inom PlasticsEurope står bakom. Detta program fokuserar på att förebygga läckage av plast i miljön, säkerställa höga återanvändnings- och återvinningsnivåer samt öka resurseffektivitet och innovation. Bland målen

[1] https://www.plasticseurope.org/download_file/view/491/672

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finns att till år 2030 ska 60 % av plastförpackningarna återanvändas eller materialåtervinnas. Till 2040 ska 100 % av plastförpackningarna återanvändas eller återvinnas (material eller energi).

- **"The European Plastics Industry Circular Economy Voluntary Commitments. Towards 50 % Plastics Waste Recycling"[2]**. Här är det sex europeiska organisationer, som representerar olika värdekedjor för plast, som presenterar sina plattformar för cirkulär ekonomi. Detta ska resultera i att 50 % av allt plastavfall återanvänds eller återvinns till år 2040. Specifikt för plastförpackningar är målet högre och då är det 70 % som gäller. Initiativet ska både leda till ökad återvinning och kraftigt minskad nedskräpning av plastprodukter i Europa.

Plastbranschen stöder därför EU-kommissionens övergripande mål att minska den marina nedskräpningen. För att hitta effektiva lösningar anser vi alla åtgärder som vidtas på EU-nivå måste vara proportionella och baseras på vetenskap och ett livscykeltänkande.

IKEM står bakom remissvaret från Svenskt Näringsliv. Vi vill också poängtera några synpunkter som plastbranschen tycker är viktiga. Till vårt remissvar bifogar vi kommentarer från två av våra europeiska organisationer, PlasticsEurope och EuPC.

SAMMANFATTNING AV VÅRA SYNPUNKTER PÅ DIREKTIVET

1. kommer att fragmentera den inre marknaden
2. det behövs tydligare definitioner
3. strider mot proportionalitetsprincipen
4. strider mot gällande lagstiftning som det cirkulära ekonomipaketet, förpackningsdirektivet och plaststrategin
5. är diskriminerande mot plast
6. lagstiftningen bör vara evidensbaserad och transparent
7. det är fel att införa förbud mot en enskild produkt när det handlar om ett generellt problem med nedskräpning
8. nedskräpningen ska i stället minskas genom ändrade attityder, förbättrad avfallshantering och ökad återvinning
9. EU-kommissionen borde istället fokusera på att uppnå en cirkulär och resurseffektiv ekonomi och att förhindra nedskräpning, inte bara minska användningen av plast
10. EU-kommissionen borde först se till så att alla EU-länder genomför befintlig lagstiftning innan man går vidare med nya lagförslag.
11. Konsekvensanalysen är bristfällig och behöver utvecklas

Synpunkterna 7 - 11 utvecklas i remissvaret från Svenskt Näringsliv som vi står bakom. Synpunkterna 1 – 6 utvecklas nedan.

Kommer att fragmentera den inre marknaden

En av EU-kommissionens motiveringar till direktivet är att undvika en marknadsfragmentering när medlemsstaterna vidtar åtgärder som inte är samordnade och som skiljer sig åt i fråga om omfattning, inriktning och ambitionsnivå[3].

Tyvärr är risken stor att direktivet ändå kommer att leda till en marknadsfragmentering. Det finns flera anledningar till detta:

- Att man har valt ett direktiv som lagstiftningsinstrument, med den flexibilitet och nationell tolkning detta kan innebära. Detta har påpekats av the Regulatory Scrutiny Board.

[2] https://docs.wixstatic.com/ugd/2eb778_94bb707b97d54dde900c800d347d9c96.pdf

[3] Bland annat uttryckt på sidan 6 i direktivet.

- Direktivet tillåter att medlemsstaterna väljer vilka åtgärder som man ska vidta för att minska förbrukningen (artikel 4) samt att det också är upp till medlemsstaterna att välja hur produkterna ska märkas (artikel 7).
- Vidare är de föreslagna definitionerna och produktkategorierna i bilagan oklara och kan därför leda till olika tolkningar i olika medlemsstater. Detta kan också leda till att många produkter omfattas som är mycket resurseffektiva och inte tillhör de saker som mest återfinns i havsmiljön.
- Dessa risker förvärras genom att direktivet har artikel 192 i EUF-fördraget (miljöskydd) som rättslig grund.

Det behövs tydligare definitioner

För att skydda den inre marknaden och för att säkerställa genomförandet och efterlevnaden på nationell nivå behövs tydligare definitioner. Dessas inverkan behöver tydligt förstås och vara baserade på slutsatserna av studierna på de mest förekommande föremålen på stränderna enligt konsekvensbedömningen.

Den europeiska plastbranschen har genom sina organisationer PlasticsEurope och EuPC föreslagit en rad förtydliganden gällande definitionerna i direktivet[4]. Vi står bakom dessa förslag, vilka presenteras nedan:

PlasticsEurope föreslår följande:

- ‘‘Single use’ should be defined by stating what ‘single use’ is rather than by what it is not
- ‘plastic products’ should cover products which are mainly composed of plastic
- ‘Packets and wrappers’ should be defined in order to cover those categories identified in the JRC report and supporting evidence
- ‘Food containers’ should be defined in a way which would avoid the unintended inclusion of packaging used to extend shelf-life.
- Clarify under Article 2 on the Scope, that the Directive is limited to addressing the impact of the top ten items found in the environment.

EuPC föreslår följande:

- That qualify cups, food & beverage containers, wrappers as packaging, thus allowing to make the link with the Packaging and Packaging Waste Directive;
- While specifically listing the remaining products mentioned in the Annex of the Proposal, that cannot be qualified as packaging (e.g. cutlery, plates, straws, beverage stirrers).
- And consider single use plastic products (cups, food & beverage containers, wrappers, cutlery, plates, straws, beverage stirrers) those that cannot pass 20 complete cycles in the dishwasher under the technical conditions of performance of the tests and calibration of the devices defined in standard NF EN 12875-1: 2005 ("Mechanical resistance in the dishwasher of utensils - Part 1: test method of reference for articles for domestic use - », November 2005) 12.

Strider mot proportionalitetsprincipen

Enligt proportionalitetsprincipen ska unionens åtgärder till innehåll och form inte gå utöver vad som är nödvändigt för att nå målen i fördragen.

Vi anser inte att de föreslagna åtgärderna i direktivet är proportionella. Den medföljande konsekvensbedömningen ger inte heller tillräckligt med bevis för att stödja åtgärderna.

[4] “PlasticsEurope and single-use plastic products”, July 2018, och “EuPC Position Paper on European Commission’s proposal for a Directive on the reduction of certain types of plastics (single use plastics and fishing gear)”, Brussels, 23 July 2018

I det reviderade avfallsramdirektivet identifieras följande orsaker som viktiga när det gäller nedskräpning: dålig avfallshantering och infrastruktur, olämpligt konsumentbeteende och allmänhetens bristande medvetenhet som orsakerna till nedskräpning. Detta återspeglas också i EU-kommissionens motivering till föreliggande direktiv.

När EU kommissionen frågade medborgarna hur nedskräpningen ska kunna minskas så ansåg medborgarna att den viktigaste åtgärden är att "säkerställa tillgängligheten av offentliga soptunnor", därefter "tillse bättre efterlevnad av lagar mot nedskräpning" och på tredje plats kom "informationskampanjer för att öka medvetenheten bland medborgarna".

Att förbjuda vissa produkter bara baserat på tillgången på ersättare utan att göra en grundlig konsekvensbedömning av sociala, ekonomiska och miljömässiga konsekvenser leder inte till de beteendeförändringar som krävs för en hållbar framtid.

Vi föreslår att:

- Börja med att åtgärda de grundläggande orsakerna till nedskräpningen genom ändrade attityder, förbättrad avfallshantering och ökad återvinning.
- EU-kommissionen borde fokusera på att nuvarande lagstiftning kring avfallshantering och nedskräpning bättre implementeras. I sin rapport om genomförandet av EU:s lagstiftning om avfallshantering från 2013 beskriver EU-kommissionen att det finns stora brister i tillämpningen i medlemsstaterna. Detta är viktigt för att skapa likvärdiga förutsättningar och möjligheter på den inre marknaden för hållbara investeringar och dessutom skapa miljöfördelar.
- Satsa på ökad återvinning inom producentansvaren istället för minskad användning och förbud. Detta gäller särskilt för produkter som redan ingår i producentansvaren eller enkelt kan tas upp inom ett. Tallrikar är ett exempel som inte ingår i de tio mest förekommande produkterna på stränderna och som enkelt kan tas upp inom ett EPR-system.

Strider mot gällande lagstiftning

Direktivet strider mot gällande lagstiftning som principerna om effektivitet och cirkuläritet som anges i det cirkulära ekonomipaketet, den reviderade avfallslagstiftningen, plaststrategin, EU-kommissionen uppmaning om frivilliga åtaganden (voluntary pledges) för att uppnå 10 miljoner ton återvunnen plast i nya produkter till år 2025.

De är speciellt anmärkningsvärt att inte de åtgärder som anges i bilagorna I, II och III i plaststrategin inte bättre återspeglas i direktivet. Inte heller stödjs de frivilliga åtaganden som plastindustrin presenterats och som tagits fram i samråd med EU-kommissionen. Först uppmanas industrin att öka användningen av återvunnen plast och att finansiera lösningar som går in i denna riktning, sedan ska en stor källa till återvinningsbart plastmaterial minskas utan vetenskaplig grund. Man kunde förväntat sig av ett direktiv som utgår ifrån plaststrategin att åtgärderna skulle skilja mellan eller uppmuntra återvinningsbara produkter och produkter med återvunnen plast i, men i stället föreslås totalt förbud eller restriktioner för vissa återvinningsbara produkter (som livsmedelsförpackningar, tallrikar, bestick, dryckesbehållare, koppar).

Förpackningsdirektivet är den viktigaste lagstiftningen för förpackningar och förpackningsavfall. Genom att nu direktivet om minskning av vissa plastprodukters inverkan på miljön föreslås inkludera vissa förpackningar som omfattas av förpackningsdirektivet skapas juridisk osäkerhet för medlemsstaterna och ökar komplexiteten för företagen att uppfylla lagstiftningen. Vidare har förpackningsdirektivet artikel 114 i EUF-fördraget (om inre marknaden) som sin rättsliga grund medan direktivet om minskning av vissa plastprodukters inverkan på miljön föreslås ha sin rättsliga grund i artikel 192 i EUF-fördraget (om miljöskydd).

Vi föreslår att:

- Direktivet kompletterar det reviderade ramdirektivet om avfall, förpackningsdirektivet och plaststrategin. Direktivet bör varken kopiera eller skapa inkonsekvenser med den befintliga lagstiftningen. Detta kan leda till förvirring och eventuella förseningar vid genomförandet av åtgärder i den befintliga lagstiftningen fram till att direktivet om minskning av vissa plastprodukters inverkan på miljön antagits.
- Tydliggör att förpackningsdirektivet är den överordnade lagstiftningen för de förpackningar som omfattas av direktivet om minskning av vissa plastprodukters inverkan på miljön.

Är diskriminerande mot plast

Vi anser att EU-kommissionens konsekvensbedömning är bristfällig och verkar vara baserad på ett svepande antagande att allt avfall som inte är av plast är bättre för miljön än plastavfall. Direktivet är därför diskriminerande mot plast eftersom det inte stöds av några miljöbevis för att produkter av alternativa material skulle vara bättre.

Även om det kan ta lång tid innan plastprodukter har brutits ner i miljön gäller detta också många andra material. Det är också viktigt att ha ett livscykeltänkande och inte bara se till avfallsfasen och de produkter som felaktigt hamnar i miljön.

Matförpackningar, i synnerhet för engångsbruk, skyddar livsmedlet och bidrar till att minska livsmedelsavfall och öka hållbarheten i livsmedelskedjan. Detta har nyligen påpekats i Europaparlamentets resolution om livsmedelsavfall[5].

Användningen av plast för matförpackningar ökar eftersom plasterna har många goda egenskaper i detta sammanhang. T.ex. när det gäller att skydda och bevara livsmedlet, att skapa en god livsmedelshygien, konsumentsäkerhet (plast är det mest reglerat materialet i kontakt med livsmedel), och funktionalitet (kan vara genomskinliga så konsumenterna ser vad man köper).

Genom att förbjuda vissa typer av plastförpackningar, t.ex. matförpackningar, kommer antingen hållbarheten för livsmedlet att minska kraftigt och leda till ökat livsmedelsavfall eller så får man tillsätta fler tillsatser till maten för att förhindra dess naturliga nedbrytningsprocesser.

En av plasternas fördelar är att de är lätta och starka. Därför kan 50 procent av alla varor i Västeuropa vara förpackade i plastförpackningar men ändå står plastförpackningarna bara för 17 procent av den totala vikten av alla förpackningar[6].

Dessutom har den genomsnittliga förpackningsvikten minskat med 28 procent under de senaste tio åren. Lätta förpackningar innebär lättare laster eller färre lastbilar som behövs för att transportera samma mängd varor, det bidrar till att minska energiåtgången för transporterna, minska utsläppen och sänka fraktkostnaderna.

[5] http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+TA+P8-TA-2017-0207+0+DOC+PDF+V0//EN

[6] "Plastic Packaging: Born to protect" PlasticsEurope https://www.plasticseurope.org/en/resources/publications/112-plastic-packaging-born-protect

En omfattande studie[7] visar att om vi skulle byta ut de plastförpackningar som vi använder idag mot alternativa material så skulle:

- vikten på förpackningarna öka 3,6 gånger
- energiförbrukningen öka 2,2 gånger
- utsläppen av växthusgaser öka 2,7 gånger.

Ett nedskräpningsbeteende och felaktig avfallshantering är oberoende av materialtyp. Eftersom direktivet mest leder till en övergång till engångsprodukter i alternativa material, kommer inte nedskräpningen att minska, det kommer bara bestå av andra material. Byte till alternativa engångsprodukter kommer fortfarande att innebära att resurser bara används en gång.

Insatser bör därför vidtas som säkerställer fullständigt genomförande av befintlig lagstiftning och nya lagstiftning säkerställer att inget avfall, varken av plast eller annat material, hamnar i miljön. Om alternativ beaktas måste beslutet baseras på en fullständig livscykelanalys för att bestämma vilket alternativ som totalt sett har den lägsta påverkan på miljön.

Lagstiftningen bör vara evidensbaserad och transparent

Politiska åtgärder måste baseras på vetenskapliga bevis, tydliga data och en fullständig och öppen bedömning av de socioekonomiska konsekvenserna.

Det vetenskapliga samfundet har efterfrågat ökad tydlighet i vilken miljöpåverkan plastavfallet har för att politiken ska vara mer evidensbaserad. Plastavfall i miljön ger anledning till oro, men den vetenskapliga förståelsen av dess exakta effekter är fortfarande i sin linda[8]. Enligt studier, finns det behov av att utveckla en ny, bättre skräddarsydda riskbedömningar “to reduce misconceptions and uncertainty about the ecological and human health risks of all sizes of plastic waste, to guide scientifically-sound policies that are appropriate to the scale of the problem”.

Artikel 15 i direktivet som avser att utvärdera direktivet om 6 år eller eventuellt substitution av engångsartiklar i plast med biologiskt nedbrytbar plast är inte acceptabelt. Denna analys borde redan ha gjorts nu för att veta vilka effekterna av direktivets blir och för att det bästa miljövalet ska vila på vetenskaplig grund, utan några förutbestämda preferenser för ett material. Den medföljande konsekvensanalysen räcker inte för att stödja förslaget, vilket även bekräftats av the Scrutiny Board.

Erkända livscykeldata på möjliga alternativ bör noggrant övervägas innan ett material eller en produkt väljs istället för ett annat. Detta med tanke på att produkterna i ett alternativt material lika mycket kan bli skräp och orsaka skador på miljön om inte långsiktigt hållbara lösningar finns. PlasticsEurope samarbetar med experter från Forum for Sustainability för att med Life Cycle Innovation (FSLCI) adressera marin nedskräpning i livscykelanalyser.

[7] denskstatt study on the impact of plastic packaging on energy consumption and GHG emissions, July 2011 https://www.plasticseurope.org/en/resources/publications/167-impact-plastic-packaging-energy-consumption-and-ghg-emissions

[8] European Commission’s Science for Environment Policy Newsletter Issue no. 506, 19 April 2018, “Clarity needed on environmental impact of plastic waste for evidence-based policy”

SYNPUNKTER PÅ OLIKA DELAR AV DIREKTIVET

Enligt önskemålen i ”Svara på remiss – hur och varför” följer här våra synpunkter enligt dispositionen i direktivet. Rubrikerna kopplar därför till de olika avsnitten i direktivet.

1. BAKGRUND TILL FÖRSLAGET

• Motiv och syfte med förslaget

Vi saknar i detta avsnitt de positiva aspekterna av varför vi använder plast. Vi anser att det bör framgå i bakgrundsbeskrivningen att engångsartiklar i många fall har visat sig vara ett svar på marknads- eller regelkrav för hygien, konsumentskydd och livsmedelssäkerhet. Deras användning har också tydliga miljöfördelar, till exempel att förlänga hållbarheten i butikerna eller förhindra matavfall längs matförsörjningskedjan, från jord till bord[9].

Plast används i ett stort antal produkter för engångsbruk, men det betyder inte att de blir avfall efter en kort livslängd. Att vissa produkter är för engångsbruk innebär inte automatiskt att de har en negativ inverkan på miljön. Många engångsprodukter i eller med plast är nödvändiga medfört en ökad livskvalitet, skydd av varor samt minskad miljöpåverkan.

Som vi beskriver tidigare under rubriken ”Är diskriminerande mot plast” så ökar användningen av plast för matförpackningar eftersom plasterna har många goda egenskaper i detta sammanhang. T.ex. när det gäller att skydda och bevara livsmedlet, att skapa en god livsmedelshygien, konsumentsäkerhet (plast är det mest reglerat materialet i kontakt med livsmedel), och funktionalitet (kan vara genomskinliga så konsumenterna ser vad man köper).

Europaparlamentet har nyligen i sin resolution om livsmedelsavfall[10] lyft fram hur viktiga livsmedelsförpackningar är för att skydda livsmedlet och bidrar till att minska livsmedelsavfall.

Man bör också lyfta fram vilka konsekvenserna blir om vi skulle byta ut de plastförpackningar som vi använder idag mot alternativa material. En omfattande studie[11] visar att då skulle:

- vikten på förpackningarna öka 3,6 gånger
- energiförbrukningen öka 2,2 gånger
- utsläppen av växthusgaser öka 2,7 gånger.

• Förenlighet med befintliga bestämmelser inom området

Som vi beskriver tidigare under rubriken ”Strider mot gällande lagstiftning” så strider direktivet mot gällande lagstiftning som det cirkulära ekonomipaketet, den reviderade avfallslagstiftningen, plaststrategin, EU-kommissionen uppmaning om frivilliga åtaganden (voluntary pledges) för att uppnå 10 miljoner ton återvunnen plast i nya produkter till år 2025.

• Förenlighet med unionens politik inom andra områden

Som vi beskriver tidigare under rubriken ”Kommer att fragmentera den inre marknaden” så anser vi att risken är stor att direktivet tyvärr kommer att leda till en marknadsfragmentering och därför inte är Förenlighet med unionens politik inom andra områden. Vi tar upp flera anledningar till varför vi anser detta.

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[9] Se t.ex. SAVE FOOD initiative av FAO http://www.fao.org/save-food/projects/saarc-countries/en/

[10] http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+TA+P8-TA-2017-0207+0+DOC+PDF+V0//EN

[11] denskstatt study on the impact of plastic packaging on energy consumption and GHG emissions, July 2011 https://www.plasticseurope.org/en/resources/publications/167-impact-plastic-packaging-energy-consumption-and-ghg-emissions

2. RÄTTSLIG GRUND, SUBSIDIARITETSPRINCIPEN OCH PROPORTIONALITETSPRINCIPEN

• **Proportionalitetsprincipen**

Som vi beskriver tidigare under rubriken ”Strider mot proportionalitetsprincipen” så anser vi inte att de föreslagna åtgärderna i direktivet är proportionella med vad som är nödvändigt att göra för att nå målet om minskad nedskräpning. Konsekvensbedömningen ger inte tillräckligt med bevis för att stödja dem. Vi föreslår andra åtgärder som är mer proportionella.

3 RESULTAT AV EFTERHANDSUTVÄRDERINGAR, SAMRÅD MED BERÖRDA PARTER OCH KONSEKVENSBEDÖMNINGAR

• **Konsekvensbedömning**

Som vi beskriver tidigare under rubriken ”Är diskriminerande mot plast” så anser vi att EU-kommissionens konsekvensbedömning är bristfällig och verkar vara baserad på ett svepande antagande att allt avfall som inte är av plast är bättre för miljön än plastavfall. Även om det kan ta lång tid innan plastprodukter har brutits ner i miljön gäller detta också många andra material. Det är också viktigt att ha ett livscykeltänkande och inte bara se till avfallsfasen och de produkter som felaktigt hamnar i miljön utan också beakta användningsfasen.

Som Svenskt Näringsliv lyfter fram i sitt remissvar om konsekvensbedömningen så har den genomförts under en mycket kort tidsperiod. Vidare har flertalet konsekvenser inte har utretts i tillräcklig grad trots att de lyftes i konsultationen, t ex konsekvenser och risker kopplat till hantering av livsmedel, och dess effekter kopplat till konsumenthälsoperspektivet i samband med mer begränsad tillgänglighet till mat- och dryckesförpackningar. Vidare innebär en förändring av dagens användning av engångs-produkter omfattande logistiska och ekonomiska utmaningar för de konsumentnära verksamheter som idag nyttjar engångsprodukter, detta bör också konsekven utredas. För att åstadkomma långsiktiga och kostnadseffektiva lösningar krävs ett holistiskt synsätt som baseras på ett livscykeltänkande.

ARTIKLARNA I DIREKTIVET

När det gäller synpunkter på artiklarna 4 till 10 så hänvisar vi till remissvaret från Svenskt Näringsliv.

BILAGOR

- PlasticsEurope and single-use plastic products, July 2018
- EuPC Position Paper on European Commission’s proposal for a Directive on the reduction of certain types of plastics (single use plastics and fishing gear), Brussels, 23 July 2018

IKEM – Innovations- och kemiindustrierna

Lena Lundberg
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PlasticsEurope and single-use plastic products

July 2018

PlasticsEurope acknowledges that marine litter is a significant global challenge and that any waste entering our rivers and oceans is unacceptable. The priority should be to stop waste of any kind, including plastic waste, from being littered and leaking into the environment. We therefore welcome all effective and proportionate initiatives aimed at preventing marine litter. We believe that making progress on this issue is crucial and that all stakeholders, including plastic producers, need to accelerate joint efforts.

We therefore support the Commission's overarching objective to reduce marine litter and look forward to engaging actively with the EU institutions on the proposal. For effective solutions to be found, any approach taken at EU level needs to be proportionate and based on a sound methodology and scientific evidence.

Plastics are used in a large number of single-use applications, but this does not mean that they become waste after a short life span. Moreover, the fact that certain applications are single-use does not automatically mean that they have a negative impact on the environment. Many single-use products made of or including plastics are necessity products that have brought significant contributions to quality of life and the protection of goods. It is therefore essential, for the purpose of this Directive, to limit the scope of the single-use items it covers to those which are found in the marine environment.

Understanding the need for immediate action in order to stop the flow of plastics into the environment, and considering the need to develop appropriate measures, we would like to share the following considerations:

Why are single use plastic products used?
In many cases, single-use items have proved to be an answer to market or regulatory needs for hygiene, consumer protection and food safety. Their use also have clear environmental benefits, such as extending shelf life in stores or preventing food waste along the food supply chain, from farm to fork[1].

What can we do to reduce marine litter?
Europe should turn the current rise in environmental awareness into an opportunity to encourage consumers to fully endorse a culture of recycling. The Waste Framework Directive and the Packaging and Packaging Waste Directive have paved the way for proper waste management in Europe, including measures supporting collection and sorting systems, mandatory EPR for packaging, consumer awareness campaigns and measures to prevent and reduce the littering.

[1] See SAVE FOOD initiative of the FAO http://www.fao.org/save-food/projects/saarc-countries/en/

What is the impact of an alternative?

The Commission's impact assessment appears to be based on a sweeping assumption that a non-plastic waste in the marine environment is better than plastic. While it is true that plastic products, when littered, can take a long time before they degrade, it is important to determine, using a life cycle approach, which alternative has the lowest impact on the environment overall. Littering behaviour and improper waste management is independent of material type. Efforts should be put on ensuring full implementation of existing rules and new policies should ensure that no waste, plastic or otherwise, ends up having a negative impact on the environment. If alternatives are considered the decision needs to be based on full life cycle analysis.

Clear definitions are essential –

The scope of the current proposal is not clear and would catch numerous products that are highly resource efficient and not part of the items most found in the marine environment. Furthermore, the proposed definitions and product categories covered will create significant problems in the practical implementation of the proposal. Their vagueness could lead to a fragmentation of the internal market. We believe that the definitions of items must be clarified, their impact clearly understood and based on the findings of the studies on the most littered items found on beaches referred to in the Impact Assessment.

Our commitment –

PlasticsEurope reaffirms the voluntary commitment[2] it had already announced when the EU Plastics Strategy was issued earlier this year. Plastic raw material producers are determined to tackle marine littering and the overall waste issue in collaboration with the relevant stakeholders – plastic is not the issue, but waste certainly is.

[2] The Plastics 2030 voluntary commitment focuses on increasing re-use and recycling, preventing plastics leakage into the environment, and accelerating resource efficiency. See https://www.plasticseurope.org/application/files/5115/1966/5994/PlasticsEurope_-_Voluntary_Commitment_FINAL.PDF

PlasticsEurope
Association of Plastics Manufacturers

Annex – our views on specific aspects of the proposal

1. Clear definitions should be adopted for effective solutions to be found

Terms defined in the proposal should be clarified to ensure consistency with the environmental acquis, international standards and to avoid including items which are not linked to marine litter. For example, the current definition of 'single use plastics' and the annexes cover items which are single use in order to meet the highest hygiene requirements as is needed for contact lenses or packaging for fresh meat, for example.

Recommendation

Clarify definitions in order to ensure implementation and enforcement at national level and safeguard the internal market.

For the purpose of this Directive:

- ''Single use' should be defined by stating what 'single use' is rather than by what it is not
- 'plastic products' should cover products which are mainly composed of plastic
- 'Packets and wrappers' should be defined in order to cover those categories identified in the JRC report and supporting evidence
- 'Food containers' should be defined in a way which would avoid the unintended inclusion of packaging used to extend shelf-life.

2. Policy coherence should be ensured

The Directive should be complementary to the revised Waste Framework Directive, Packaging and Packaging Waste Directive and the Plastics Strategy and should neither duplicate nor potentially create incoherencies with the existing environmental acquis[3]. This could lead to confusion and potential delays in the implementation of measures outlined in the waste package until final adoption of the Directive on Single use plastics.

Furthermore, in order to be consistent with JRC reports and studies used as a basis for the Directive, prioritisation is essential in order to get quick results.

Recommendation

Clarify under Article 2 on the Scope, that the Directive is limited to addressing the impact of the top ten items found in the environment.

3. Measures should be proportionate

The revised Waste Framework Directive identifies poor waste management practices and infrastructure, inappropriate consumer littering behaviour and the lack of public awareness as the

[3]This includes among others: Marine and Water legislation which all include requirements on marine litter (Marine Framework Directive, Urban Waste Water Treatment Directive, and Port Reception Facilities Directive currently under revision).

root causes of litter. This is reflected in the Commission proposal's explanatory memorandum as well.

Responsible consumption is fundamental and while the focus of the current Directive is on plastic products, consumption patterns need to evolve and responsible product and resource consumption should be promoted. Banning certain types of products based on the availability of substitutes without conducting a thorough impact assessment of the social, economic and environmental implications will not lead to the behavioural shift required for a sustainable future.

Recommendations

- Tackle the root causes of litter by improving waste management practices and infrastructure (including the availability of more public litter bins and proper collection), raising awareness among citizens about litter prevention, and enforcing anti-litter laws in line with Article 36 of the revised Waste Framework Directive.
- Favour EPR, which drives recycling, instead of bans – in particular for products such as plates which do not figure among the top ten items and can easily be taken up within an EPR system.

4. Legislation should be evidence-based and transparent

Policy measures need to be based on sound scientific evidence, clear data and a full and transparent socio-economic impact assessment.

Recognised life cycle data on possible alternatives should also be carefully considered prior to promoting one material or product to the detriment of another, keeping in mind that the products produced with an alternative material could equally be littered and create harm if no long-term, sustainable solution is found[4].

Recommendation

- Carry out a thorough life cycle analysis of the impact of possible alternatives on the environment as well as an analysis of the viability and acceptance of such alternatives by consumers before putting restrictions or bans in place.

[4] PlasticsEurope is collaborating with experts from the Forum for Sustainability through Life Cycle Innovation (FSLCI) to address marine litter in life cycle assessment

Brussels, 23 July 2018

EuPC Position Paper on European Commission's proposal for a Directive on the reduction of certain types of plastics (single use plastics and fishing gear)

EuPC has issued its first comments on the proposal for a Directive on the reduction of certain types of plastics (single use plastics and fishing gear)[1], this is a Position paper that aims at providing a thorough comment and at offering some alternative proposals in the context of the Public consultation launched by the European Commission on May 28th, 2018.

According to independent studies, global marine litter is mainly generated by Asian countries. China, Indonesia, Philippines, Thailand and Vietnam appear in the Top 10 countries that create ocean plastic waste[2], with Europe being acknowledged as a leader in waste management, including plastics. Poor waste management is considered as the main pathway for food containers, bottles and cups to reach marine environment[3], additionally for this the European Union has recently finalized its Waste legislation revision, increasing recycling targets and establishing a new policy on litter and prevention of littering, which is meant to resolve many plastics negative externalities.

For these reasons and the ones mentioned below, EuPC would like to share the following view on the proposal.

Violation of Single market & Violation of Proportionality

The proposal violates the principle of the EU Single market, by allowing European Member States to restrict certain classes of products (see Article 5 of the Proposal), thus **fragmenting the European Market**. Moreover, the choice of a Directive as the legislative instrument to tackle the issue does not help, as confirmed by the Regulatory Scrutiny Board. The implementation of the Plastics Carrier bags Directive still proves that a Directive creates wide differences among Member States, undermining the harmonization of rules and products. The means on how to achieve the purported goals are disproportionate and the accompanying Impact Assessment do not provide enough evidence to support them.

We therefore suggest to delete the corresponding Article on EU market restriction but to concentrate on reduction targets only. These reduction targets should **mainly apply to areas or uses of uncontrolled waste collection areas**. For example, beach bars, picnic areas, parking lots and similar on-the-go spots. On the

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1 EuPC Press release of May 28th, 2018 " EuPC's first comments on the European Commission's directive proposal on the reduction of certain type of plastics", available here.

2 https://rubbishplease.co.uk/blog/plastic-ocean-waste-rise/

3 Commission SWD Impact Assessment SWD (2018)254 Final para. 2.2.3.

other side, areas in which waste collection is 100% controlled, such as households, festivals, hospitals, offices there these products should be authorized to be used.

Contradiction with existing legislation: CEP and related documents and PPWD

This proposal is at odds with what the European Commission has advocated so far. The document is in **contradiction with the principles of efficiency & circularity foreseen in the Circular Economy Package**, the revised Waste legislation, the Plastics Strategy, the Pledge Campaign and their underlying common call for increased recycling and increased use of recycled plastics.

It seems that the European Commission has forgotten to mention its own call for sustainable collection and recovery solutions, requirements for higher quality recyclates, or the encouragement of plastics recycling via EU-wide reduction of landfilling of plastic waste.

In particular, the **measures foreseen in Annex I, II and III of the Plastics Strategy are not mirrored in the logic followed in this proposal nor in the *Voluntary Commitments*[4]** put forward by the plastics industry, backed and written down in consultation with the European Commission. On one side, the industry is requested to increase the use of recycled content and to finance solutions that go into this direction, then a great sources of recyclable plastic material is cut without any scientific grounds.

On recyclability

EuPC has shared so far, the vision of the European Commission in relation to Plastics, in particular the rationale of the waste hierarchy and Plastics Strategy, to work on increasing recycled content in products, especially for those types of products that could improve collection and take up more recycled content. Efficient collection, sorting and recycling of products are essential to determine which action must be taken regarding their impact on the environment.

Another striking aspect is that, as one should have expected from a proposal stemming from the Plastics Strategy, there is no distinction nor encouragement for recyclable products, instead the proposal actually calls for a total ban or restrictions of certain recyclable products (such food containers, plates, cutlery, beverage containers, cups).

Also, **there is no distinction nor encouragement for use of recycled plastics versus virgin plastics, yet the Commission calls for industry pledges on using more recycled plastics so to reach 10 million tonnes of recyclates by 2025.**

We ask for a clear harmonized European standard (definitions) on the recyclability of plastic products.

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4 European Industry Voluntary Commitments of January 16th, 2018 available here.

On the environmental analysis

The choice to tackle certain types of products only if made of plastics appears **discriminatory since it is not backed by any environmental evidence that products made of alternative material would prove better**. The European Commission consider the LCA approach as the right tool to assess true environmental benefit, however restricts certain plastic products without assessing true sustainable options. Alternatives may pose unintended consequences and could be more harmful to the environment.

Also, if now, according to the Commission, most of the visible marine litter is made of plastics, after the entry into force of this Directive, most of it will be made of same types of products made of different materials. As this is clearly a **pathology resulting of inefficient waste management systems** (to be discussed where located geographically), then it is an issue for the more general category of thrown away products. And thus, this issue should be tackled by an anti-litter tax or other measures to increase collection of waste to tackle littering behaviors. By proposing the switch to alternative disposables, the proposed Directive continues in a rationale of make-use-dispose rather than stimulating a transition to a circular business model. Switching to alternative disposables still means using resources only once.

Additionally, **the scientific community calls for more clarity in the environmental impact of plastic waste for evidence-based policy**, as plastic waste in the environment presents cause for concern, but scientific understanding of its exact impacts is still in its infancy.[5] According to studies, there is the need to develop new better tailored risk assessment "*to reduce misconceptions and uncertainty about the ecological and human health risks of all sizes of plastic waste, to guide scientifically-sound policies that are appropriate to the scale of the problem*".
Most recently, United Nations Environment Programme has published a video[6] that shows the possible tradeoffs that can be caused by switching from plastics products to their alternatives, some of the substitutes we could use for plastic have a higher environmental impact in other ways. For example, according to a **Study from the Danish Environmental Protection Agency (Miljøstyrelsen) on the life cycle environmental impacts of production, use and disposal of grocery carrier bags, plastics prove to be the material with the overall lowest impact to environment**[7]. Same result has been reached by another comparative study on disposable tableware authored by Promo, an association of Italian manufacturers of plastic cups, plates and cutlery: again, **the LCA has shown that the environmental impact of the plastic tableware life cycle made of polypropylene and polystyrene, typical options, is on average lower** than that of disposable tableware that can be made of PLA and cellulose pulp[8].

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[5] European Commission's *Science for Environment Policy* Newsletter Issue no. 506, 19 April 2018, "Clarity needed on environmental impact of plastic waste for evidence-based policy", available here.

[6] UNEP Video "*Plastic Pollution: how Humans are turning the world into plastic*", 3 July 2018, available here.

[7] Miljøstyrelsen Miljøprojekt nr. 1985 "*Life Cycle Assessment of grocery carrier bags*" of 14 March 2018, available here.

[88] Pro.mo "*Comparative LCA of reusable and disposable tableware*", 24 June 2016, available here.

Article 15 of the Proposal that foresees to evaluate this Directive in 6 years or the possible substitution of SUP with biodegradable plastics is not acceptable. The Report should have been already made now in order to truly evaluate possible its impact of restricting certain types of products and **make the best environmental choice on scientific grounds, without any preconceived preference for a material**. The accompanying Impact Assessment is not enough to support the proposal, as also confirmed by the Scrutiny Board.

On the role of packaging to prevent food waste

Packaging, in particular single-use, allows for food preservation, "**making an important contribution to the reduction of food waste and sustainability by extending the usable life of and protecting products"**, as recognized by the recent European Parliament's Resolution on Food Waste[9]. The Report, which has been discussed and approved by the Parliament during the same period as the Waste Package, stresses "***the positive contribution of food packaging materials and solutions to the prevention of food loss and food waste along the supply chain***". Shelf life of food products will be heavily reduced by banning certain types of plastics packaging, e.g. food wrappers, in turn causing undesired food waste or even more additives to food in order to prevent its natural decay, or long-term packaging

Not to mention the undeniable properties plastics have in terms of food hygiene, lightness, consumer safety (being the most regulated food contact material), consumer health and functionality that allows products being protected and preserved.

On the consumers' role

Littering behaviors cannot be ignored in this piece of legislation. Clearly, marine pollution caused by plastics is caused by different sources, the main one being the discard, accidental and non, by users of plastics products. For this reason, following the examples of other Member States[10], **EuPC suggests to enforce proper antilittering behavior in all European citizens through *ad hoc* instruments such as taxes or fines could prove a great solution to drastically reduce such conducts**.

The recent revision of the Waste Framework Directive would in fact will allow easily the implementation of such initiatives by MS: "*Member States should take measures aimed at preventing all forms of abandonment, dumping, uncontrolled management or other forms of discarding of waste. Member States should also take measures to clean up litter present in the environment, irrespective of its source or size and regardless of whether waste has been discarded willfully or by negligence*" [11]

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9 European Parliament resolution of 16 May 2017 on initiative on resource efficiency: reducing food waste, improving food safety (2016/2223(INI))

10 See for reference England Councils who can fine up to 150£ those dropping litter, including from vehicles.

11 See Recitals no. 33-35 of Directive (EU) 2018/851 amending Directive 2008/98/EC on waste.

On the definition of single use

The definition of single use plastics products is poorly defined, misleading and does not reflect industrial classification. The Commission assumes that these products are food contact packaging, on-the-go, rarely recycled and prone to litter.

EuPC would rather envisage a Definition of Single Use Products:

- That qualify cups, food & beverage containers, wrappers as packaging, thus allowing to make the link with the Packaging and Packaging Waste Directive;
- While specifically listing the remaining products mentioned in the Annex of the Proposal, that cannot be qualified as packaging (e.g. cutlery, plates, straws, beverage stirrers).
- And consider single use plastic products (cups, food & beverage containers, wrappers, cutlery, plates, straws, beverage stirrers) those that cannot pass 20 complete cycles in the dishwasher under the technical conditions of performance of the tests and calibration of the devices defined in standard NF EN 12875-1: 2005 ("Mechanical resistance in the dishwasher of utensils - Part 1: test method of reference for articles for domestic use - », November 2005) [12].

On the different measures

EuPC is puzzled to see that, in reference to Extended Producer Responsibility schemes (Article 8 of the Proposal) that only producers are concerned, assuming then that they are polluters without any reference to the rest of the value chain or to consumers.

Almost same comment can be done in reference to Awareness Raising Measures (Article 10), where again there is no reference to the rest of the other actors active in the field, nor indication is given on how to tackle consumers' behavior, education or their actions for responsible disposal (or irresponsible disposal/littering). It is like as if car manufacturer would have to pay the speeding fines of drivers.

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[12] Such definition is comprised in the *Question & Answer,* Question no. 4 published by the French Ministry of Environment to provide clear interpretation of what products fall into the scope of the Decree that foresees the restriction of cups, glasses and plates.
*« **4. Qu'entend-on par « gobelets, verres et assiettes jetables » ?** Réponse : Ce sont des articles à usage unique, conçus pour que leur détenteur s'en défasse à l'issue d'une unique utilisation. Dans le cadre de la mise en œuvre de bonnes pratiques pour l'application de cette disposition, un gobelet, un verre ou une assiette peut être considéré comme réutilisable dès lors que le produit passe au moins 20 cycles complets en lave-vaisselle dans les conditions techniques de réalisation des tests et de calibrage des appareils définies dans la norme NF EN 12875-1:2005 (« Résistance mécanique au lave-vaisselle des ustensiles - Partie 1 : méthode d'essai de référence pour articles à usage domestique - », novembre 2005) »* . The full Q&A is available here.

Most of the products listed in the Annex to the Proposal, can be collected, sorted and recycled, as they are in many Member States nowadays (in particular food containers, beverage bottles and cups).
Additionally, the proposed EPR schemes should be linked to the policy goals the Directive wishes to tackle, by ensuring that the corresponding revenues are used for consumers education initiatives and improvement of waste management schemes.

The addition of plates in the Annex is quite surprising as these items are not listed in the top 10 most littered items nor the Impact Assessment provides a policy analysis for them[13].

EuPC Proposals

In the light of the above considerations, EuPC would like to suggest few possible solutions to the proposal that would mitigate some of the mentioned issues:

- Develop now an EU LCA of different materials for given products;
- a definition of on-the-go packaging to be inserted in the Packaging Directive for items clearly used as packaging and accessory to food packaging, based on the expected short life span of thrown away products, not able to survive 20 cycles in the washing machine;
- a link with recyclability based on European Standards of recycling processes and recyclates as formed in CEN;
- full and efficient implementation of waste legislation in Europe;
- an effective pan-European landfill ban of plastics waste:
- an equal treatment for all disposable materials, short-life products (paper, aluminum, glass) based on LCAs.
- national initiatives run by public authorities (e.g. municipalities) to ensure more circularity per family of polymers;
- taxes or a form of penalty for citizens & public authorities to tackle littering behaviors for all materials;
- extend implementation deadline of the proposed Directive to allow society and industry to adapt to the new measures;
- help financially and bring technology to emerging and littering countries to develop sustainable waste management systems;
- Set-up a real dialogue with industry through voluntary commitments initiatives, e.g. reduction targets for use in these uncontrolled collection areas.

Annexes:

[13] Commission SWD Impact Assessment SWD (2018)254 Final para. 2.1.3.

A. The Case of PET & PE Food Containers
B. Executive Summary of Comparative Life Cycle Assessment (LCA) study of tableware for alimentary use - Disposable dishes in PP, PS, PLA, cellulose pulp and reusable ceramic dishes; Disposable glasses in PP, PS, PLA, PE coated cups and reusable glass cups.

About EuPC

European Plastics Converters (EuPC) is the leading EU-level trade association, based in Brussels, representing European plastics converting companies. Plastics converters use plastics raw materials and recycled polymers to manufacture new products. EuPC totals about 45 national as well as European plastics converting industry associations and represents more than 50,000 companies, producing over 50 million tons of plastic products every year. The European plastics industry makes a significant contribution to the welfare in Europe by enabling innovation, creating quality of life to citizens and facilitating resource efficiency and climate protection. More than 1.6 million people are working in EU converting companies (mainly SMEs) to create a turnover in excess of € 260 billion per year.

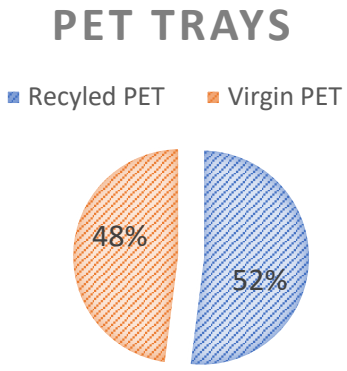
Annex A - The Case of PET Food Containers

PET & PE food containers, trays and cup are single use packaging that have a valuable place on the market. They are widely used due to their many qualities for food conservation, transportation & distribution and consumer handling.

Focusing in detail on PET, each year, 950kt of PET trays are placed on the EU market, presenting the following characteristics:

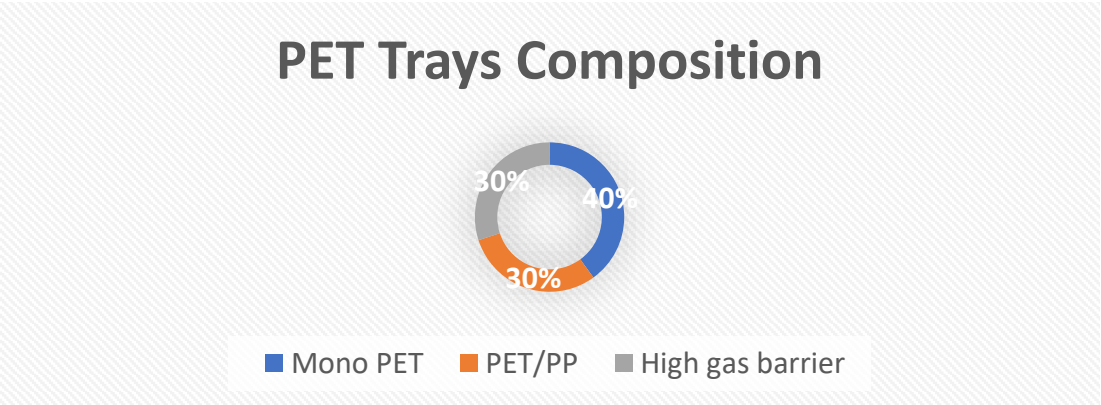
Recycled Content

It is already a common industry practice to use recycled PET in trays, making it circular since years. Currently, up to 52% of recycled PET is used to produce PET trays. Thus, adding recycled plastic content in trays is possible and shall be made an essential requirement. Accordingly, PET based trays should not be subjected to consumption reduction measures as they contribute to plastic circularity.



Recyclability of Trays

In addition, PET trays have a high recyclability potential, with a growing trend in collection and in specific recycling activities. By following a few simple design guidelines, producers can manufacture highly recyclable trays. Trays recyclability depends on material composition and design choices (i.e. labels, lidding films). Trays composed of one material are much more recyclable than multilateral ones.



Currently, in the PET trays 'market, 40% percent of all trays are made of a mono-PET material. The remaining 60% percent are less recyclable since they have high barrier and/or mix of PET and PE, which greatly hamper recycling processes and affect the quality of the final product. In addition to material composition, using transparent color and easily detachable labels make the packaging fully recyclable. Applying those few simple rules and eliminating disturbing practices to the recycling process (opaque trays, glued labels, multi-material), would ensure that trays are reintegrated into the economy.

Recycling Trays

While former technology was not able to efficiently recycle trays, it is now possible on an industrial scale in Europe. However, separate collection of trays is currently hampered by non-binding targets. Accordingly, increasing the collection rate is of outmost importance. If trays are properly designed, collected and sorted, they are 100% circular. The same conclusion can be shared for other PET articles such as PET cups and lids which are all made of a mono material.

Annex B

Comparative Life Cycle Assessment (LCA) study of tableware for alimentary use

Disposable dishes in PP, PS, PLA, cellulose pulp and reusable ceramic dishes

Disposable glasses in PP, PS, PLA, PE coated cups and reusable glass cups

Rev.3 of 24/06/2015

EXECUTIVE SUMMARY

Since 2012, the Pro.mo Group has adopted a Life Cycle Thinking oriented approach in order to gain a broader knowledge and greater awareness of the environmental impacts of the products manufactured by its member companies. In the course of 2015, Pro.mo asked company Quotasette S.r.l. to conduct a comparative Life Cycle Assessment (LCA) study of tableware for alimentary use within the framework of food catering services.
The Pro.mo Group brings together the near totality of operators in the industry and therefore the study may be seen as representative of the industry sector, which lends itself to a comparison with products having the same intended uses but coming from different manufacturing sectors (e.g., reusable tableware). The analysis was applied to two types of tableware: plates (single-use dishes in PP, PS, PLA, cellulose pulp and reusable ceramic plates) and cups (single-use cups in PP, PS, PLA, PE coated cups and reusable glass cups).

The study was performed in accordance with standards **ISO 14044 and 14040** and was subjected to a **critical review** process by certification body SGS Italia S.p.a., which means that the review was conducted by knowledgeable and expert reviewers, fully in keeping with the principle of independence.

As part of the research and awareness building activities carried out by Pro.mo, **the comparative Life Cycle Assessment study** aims to contribute to the acquisition of knowledge that might be of use to the Group member companies in pursuing their corporate strategies and policies, with a view to achieving a drastic reduction in the environmental impact of their products, and, at the same time, enable the various stakeholders to gain a better understanding of the issues associated with the life cycles of the products in question and their environmental impacts. In view of the characteristics of the products, which come in contact with food and are widely used in public catering applications, the study is not meant solely for Pro.mo member companies, **but also for lawmakers and the technical staff of public administrations and, in general, all stakeholders committed to the preservation of the environment.**

The **functional unit** adopted consisted of 1000 uses of a dish containing a meal and a cup containing 200 ml of some beverage. In the case of ceramic plates and glass cups, the cleaning process required to make the dishware reusable was also taken into due account (adding up to total of 1000 wash cycles).

The **boundaries of the system** encompass all the stages in the life cycles of the products in question ("cradle-to-grave" LCA), which means that pre-production and production stages are included, together with post-production, up to the end of life of the products.

The LCA study used **primary data** relating to the production process of single-use plastic tableware, i.e., the products manufactured by the Group member companies. The data were acquired in the course of 2014 directly from the production sites of a Group member company. Based on a validation procedure carried out on a statistical basis, these production sites were deemed to be representative of the disposable tableware production modalities adopted by the entire Group. For cellulose pulp plates the primary data were collected at a delocalised plant (eastern Europe), specialising in the production of tableware made from cellulose pulp. **Secondary data** were also used, from the Ecoinvent v. 3.1 database, to include the pre- and post-production processes, i.e., basic materials and chemicals production, energy generation, and, in general, all those processes for which primary data could not be acquired,
The **quality of the data** was assessed according to the criteria defined by the PEF methodology of the European Commission (ref. 2013/179/EU - *Commission Recommendation of 9 April 2013).*
The method used is the most advanced development of the procedures for the assessment of the quality of the data according to standards ISO 14040 and 14044, and it was applied to ensure the reliability and transparency of the results, also for external communication purposes. The assessment performed made it possible to confirm the dependability of the data used in the study, in keeping with ISO 14040/44.

In order to take into account the variability of the end treatments that the products are subjected to after use, different **end of life scenarios** were defined:

1. **CONSERVATIVE**: this is the most adverse scenario for the disposal of the various items considered in the study, which consists of disposal in a landfill;
2. **TARGET**: this is the scenario identified as the technically viable solution for the disposal of the material at end of life, which refers to the objectives established by the European Directive on waste 2008/98/EC;
3. **REAL:** this scenario was defined for, and applied solely to, the disposal of single-use tableware made from plastics (PP and PS) for which reliable data on packaging end of life solutions were available on a national scale (source: Corepla 2013).

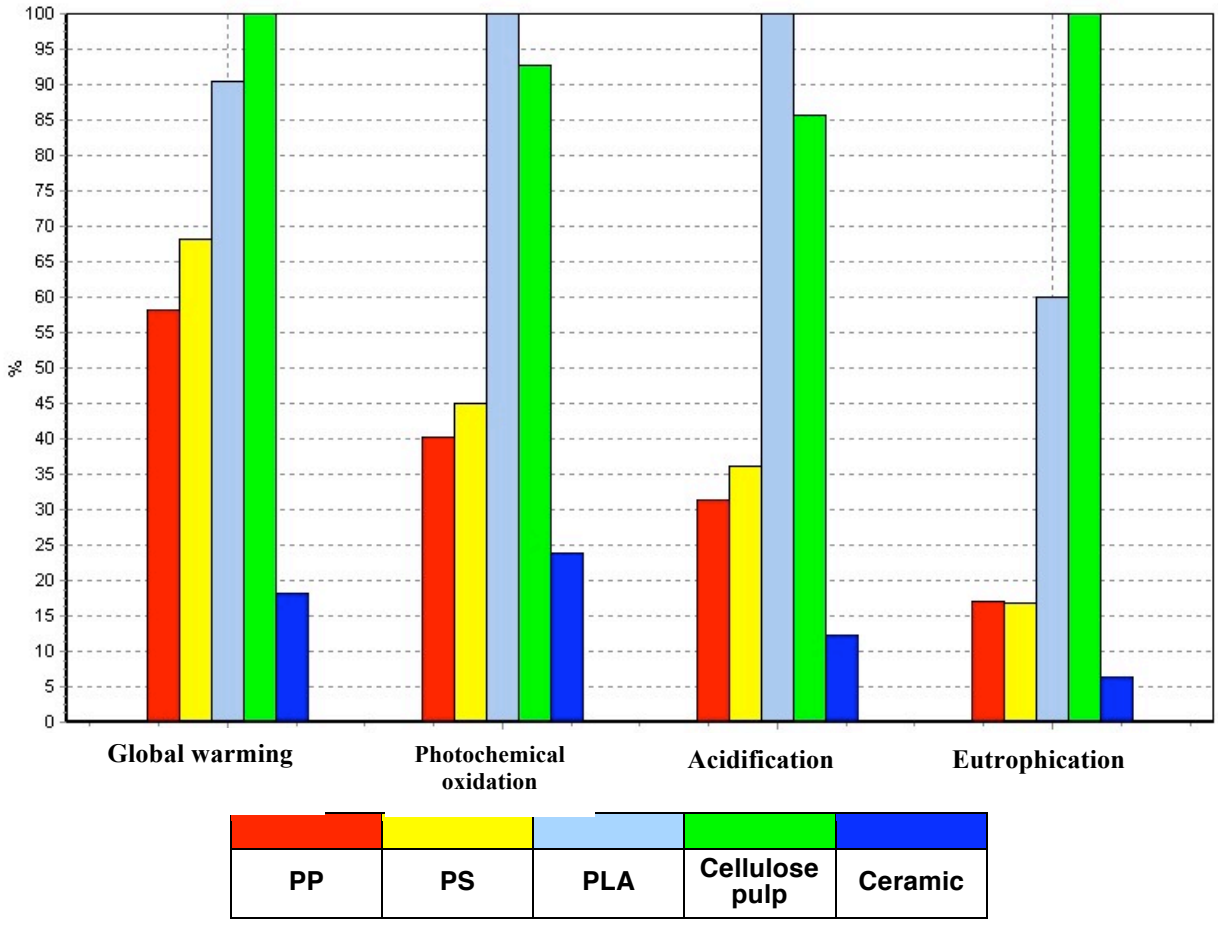
The LCA study took into account the benefits arising from recycling and the energy generated through incineration. In other words, the “System expansion” procedure was applied, in order to include in the assessment the impacts avoided in the product systems that come after the System(s) in question.
The benefits taken into account include the fact that recycling reduces the need to produce virgin new raw material as well as electric/thermal energy (through the waste-to-energy process) in new Product Systems. Moreover, a sensitivity analysis was conducted within the framework of the LCA in order to assess the incidence of the composting process in terms of raw materials avoided. The sensitivity test showed that composting does not generate significant benefits in terms of LCA results.

In accordance with the objectives of the study, the following **impact assessment methods** accepted at international level were used in conducting the LCA study: *CML-IA baseline***,** limited to the 4 impact categories subject to reporting requirements for purposes of the Environmental Product Declaration (EPD). This method was chosen to serve as the main term of reference to calculate the results and to carry out all the analyses associated with the calculation process (e.g., sensitivity analysis, contribution analysis, etc). The impact categories considered, in fact, are the ones used most widely and recognised at international level thanks to the ever wider use of the EPD. The *ILCD 2011 Midpoint+ method,* with 16 impact categories, used in the new PEF methodology of the European

Commission, was also applied. It is believed in fact, that it is important to bring to the attention of the stakeholders the results obtained for the various impact categories through the ILCD method, by adopting the EC approach and allowing for future product environmental performance reporting requirements.
This summary of the comparative LCA shows in chart form the results of **Impact assessment for the entire life cycle** obtained for the two product categories (dishes and cups) according to the CML method and the "target" end of life scenario. The "target" scenario, in fact, was found to be the most representative and closest to actual catering modalities .
In the charts that follow, the results obtained for each impact category are shown in comparative terms. The relative proportions are given in percentage terms: in each impact category, the solution having the largest environmental impact is assigned a value of 100% and the impacts of the remaining options are quantified proportionately.

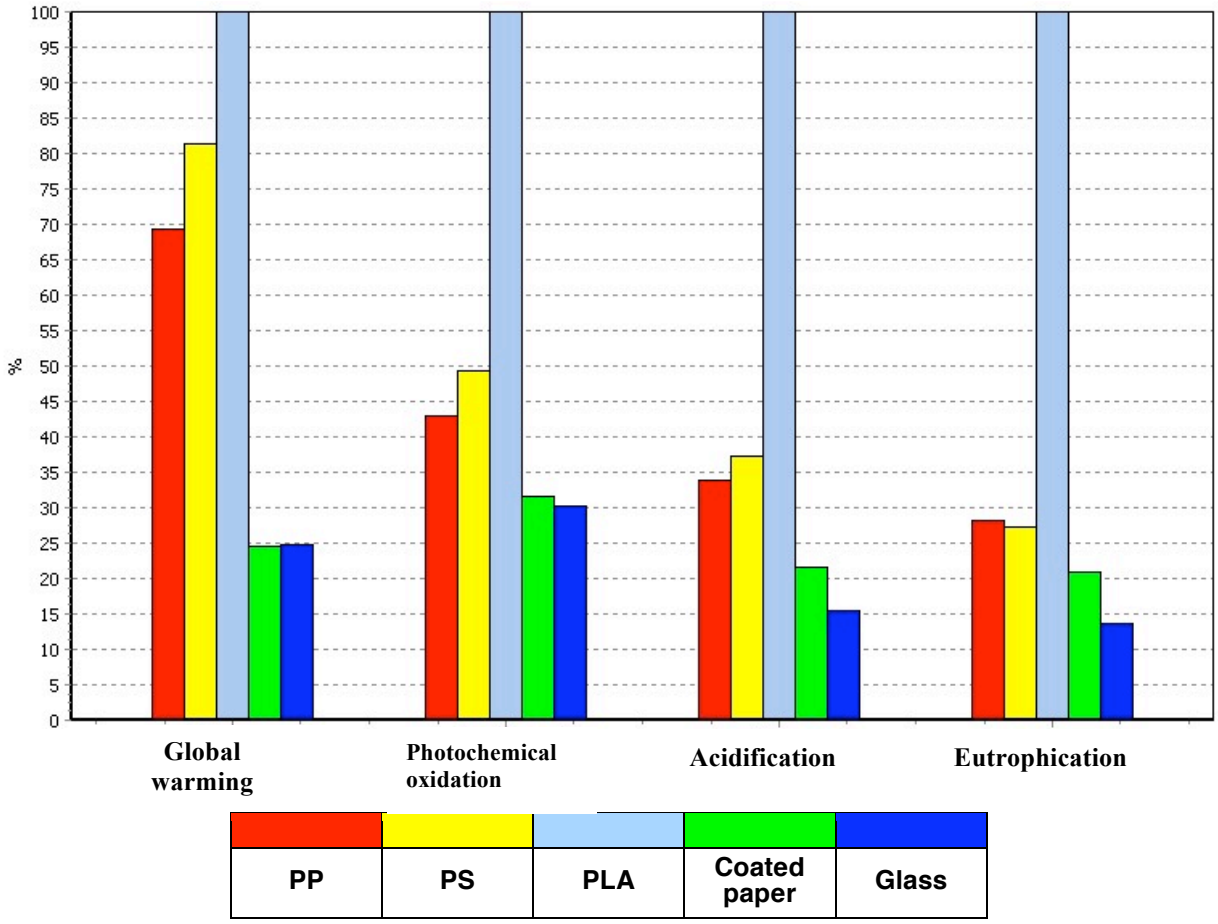
DISHES: Results of the Life Cycle Impact Analysis study according to the "target" end-of-life scenario

Functional unit: 1000 uses of a dish containing a meal



CUPS: Results of the Life Cycle Impact Analysis study according to the "target" end-of-life scenario

Functional unit: 1000 uses of a cup containing 200 ml of a beverage



From an analysis of the comparative charts we can make the following considerations:

- The products made from biopolymers (represented by PLA in this study) show higher values on average than products made from traditional polymers (PP and PS);
- The environmental performance of products from the wood supply chain (cellulose pulp, paper) are greatly affected by the manufacturing technologies used. In particular, the impact levels obtained for dishes in the cellulose pulp category are always higher than those for dishes made from traditional plastics, and, in two out of four categories, even higher than those obtained for PLA dishes. The results obtained for paper cups, which use a different manufacturing technique from cellulose pulp cups, always show impact values lower than those associated with traditional plastics;

- The impact category values associated with reusable products are significantly lower than those relating to disposable tableware, but for these products the largest impact comes from the utilisation stage, due to the washing process. A more detailed analysis of the washing stage can be performed in the light of the studies currently underway on hygiene related problems and the degree of food safety guaranteed by the washing of the tableware used in catering services.

In general, it can be stated that the different results obtained for the products in terms of impact category show mutual relationships and proportions that remain constant under different end-of-life scenarios and pursuant to different characterisation methods (CML, ILCD), as borne out by the sturdiness of the study in the sensitivity analysis.

The use of the ILCD method offers a wider range of interesting details than the CML method analysed so far. The ILCD method, in fact, is able to assess a number of highly significant aspects of interest to the consumers, such as the impact categories typical of the USEtox model (e.g., various types of human and environmental toxicity), or the Land Use and Water Depletion categories. From an analysis of the results obtained with this method, we find that, in the Land Use and Water Depletion categories, the environmental performance of reusable tableware (ceramic and glass) is worse than that of plastic tableware (PP and PS). Moreover, even paper cups are associated with higher impact levels than those obtained fro plastic tableware in 4 categories.

One of the limitations to be noted is that the quality of the data available for the various Product Systems (dishes and cups in the various materials) are not homogeneous and this may affect the uncertainty values in the final results. However, the overall quality of the data always meets the requirements specified in Recommendation 2013/179/EU on environmental footprint determination and reporting. It should also be noted that while it is of great interest in terms of the interpretation of the results, the ILCD method is still at the development stage and shows high uncertainty values in some of the impact categories considered: this is the reason why the results should always be interpreted with the support of LCA experts.

In conclusion, among the strong points whereby this comparative study should be deemed reliable and representative of the overall situation of the sector, we should underscore:

- A careful choice of the products to be compared (dishes and cups) and a consistent application of the functional units (e.g., 1000 uses) and the system boundaries, so as to represent most effectively the context of tableware utilization in catering/collective food consumption services in Italy;
- The decision to conduct the comparative study according to three possible end of life cycle scenarios (conservative, target, real) in order not to overlook any of the situations that may occur within the variable and complex framework of disposal and/or reuse of the materials making up the types of tableware examined;
- The use of specific, and hence higher quality, data, supported by an extensive use of the validation approach (including validation according to statistical models) to guarantee their representativeness relative to the sector;
- The use of two calculation methods, CML and ILCD, which nowadays are the most interesting approaches of LCA as a tool for the environmental assessment of products;

- An extensive series of sensitivity analyses focusing on the most critical aspects of the study, all of them reflecting the sturdiness of the study itself;
- The application of the uncertainty analysis, which, in general, yielded acceptable values, representative of present-day state-of-the-art developments;
- The decision to have the study undergo a critical review by an independent organisation, i.e., a certification body specialising in life cycle studies and accredited by Accredia for EPDs pursuant to ISO 14025.

For a more detailed account, the unabridged version of the LCA study can be downloaded from www.pro-mo.it