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5 July 2017  
Final

## WEEE plastics and chemical, product and waste legislation

Response to the stakeholder consultation paper on the chemical, product  
and waste interface



The WEEE Forum is supportive of the EU's 2015 Circular Economy package, and takes note of the Roadmap on the analysis of the interface between chemicals, products and waste legislation and identification of policy options.

In response to the stakeholder consultation on that Roadmap, this paper provides the WEEE Forum's views in relation to issues of concern regarding plastics in waste electrical and electronic equipment (WEEE).

## Main message

*More plastics and more different types of plastics are used in electrical and electronic equipment (EEE). WEEE plastics management gives rise to not only compliance issues but also to environmental, health and safety issues that directly affect citizens. EU waste, chemicals and product legislation must be harmonised, we must collectively agree what the recycling, recovery and disposal solutions for WEEE plastics are and we must enforce legislation. The alignment of regulations needs to provide the opportunity to the recycling industry to close the loop with post-consumer plastic from WEEE.*

## Why WEEE plastics are an issue of concern

WEEE plastics give rise to legal, technical and practical problems at the interface of chemical, product and waste legislation.

- The EEE industry accounts for 5-7% of the total European plastic demand – 2.7 million tonnes out of a total 47.8 million tonnes<sup>1</sup>. Whilst this is a small percentage compared with plastics used in packaging, the issue is that people are in contact with WEEE items that contain plastics, such as toothbrushes, smart phones and kettles, every single day.
- Increasing quantities of plastics are used in products.
- The polymers used are more highly engineered with the inclusion of additives.
- The polymers are bound with more complex products, with more than one type of polymer often being present in one product.
- The plastic from WEEE is mainly downcycled, incinerated and landfilled<sup>2</sup>.

The EEE stock in households has been quantified at 244 kg per inhabitant in France and 215 kg per inhabitant in Italy<sup>3</sup>.

## Monitoring and traceability of WEEE plastics

Codification of WEEE plastics is often ambiguous and not harmonized at EU level. Consequently, WEEE plastics containing brominated flame retardants (BFR) to a point of being hazardous waste are often (lawfully) exported as commodities (rather than as waste) to places outside the European Union, where local manufacturers make new products with contaminated plastics, to be subsequently placed on the European single market. *It is therefore critically important that all member states understand legislation in the same way. A situation whereby some member states allow the export outside the European Union of WEEE plastics containing brominated flame retardants whilst others do not, is unacceptable.*

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<sup>1</sup> Plastics - the Facts 2015 (<http://www.plasticseurope.org/Document/plastics---the-facts-2015.aspx>)

<sup>2</sup> Wäger P, Hischer R. Life cycle assessment of post-consumer plastics production from waste electrical and electronic equipment (WEEE) treatment residues in a Central European plastics recycling plant, Science of the Total Environment

<sup>3</sup> Study on the quantification of waste of electrical and electronic equipment (WEEE) in France. ADEME, 2013; Household WEEE generated in Italy, UNU et al. 2012.

In addition to this, some of these exported plastics contain BFRs which may also be BFRs listed as Persistent Organic Pollutants (POPs) above the threshold permissible for recycling. They may end up being recycled outside the EU. *Products manufactured outside the EU containing recycled plastics may contain banned POP substances, which can give rise to public health consequences.* Substances of concern in products are a growing concern for citizens as evidenced by the IPEN<sup>4</sup> report “POPs recycling contaminates children’s toys with toxic flame retardants” and the “No Brainer”<sup>5</sup> report recently released to the wider public.

*To ensure that the requirements in Directive 2012/19/EU on WEEE are met and POP substances in WEEE are left out of recycled plastics, effective enforcement and control are required. We consider EN Standard 50625-1:2014 (Collection, logistics & Treatment requirements for WEEE. General treatment requirements) an example of good practice to include in the interface analysis of the Roadmap. This CENELEC Standard and its Technical Specification TC 50625-3-1 set clear limit values (2,000 ppm or 0.2%), protocols and analysis to identify and separate BFR WEEE plastics from non-BFR WEEE plastics.*

Where there is plastics sorting aimed at separating problematic fractions (POP fractions or hazardous fractions), we observe different approaches across the EU in both the sorting of WEEE plastics and the destination of plastic fractions containing POPs. For example, it is not clear if sorted plastics containing POPs can legally be mixed with fuel before incineration. *We strongly recommend developing best practice guidelines for plastics sorting, characterization of plastic fractions as well as monitoring and tracing of the destination of sorted outputs.* This exercise will clarify what is and what is not allowed in relation to the rules for sorting, monitoring, tracing and disposal of WEEE plastics.

## Alignment of regulatory requirements

Electrical and electronic products contain many parts and materials since they are used for heterogeneous and diverse applications<sup>6</sup>. They must meet specific characteristics such as flammability class or aesthetic demands that require the use of specific types of plastics and additives. This, in addition to their relative low volumes, makes it difficult and economically challenging to separate for high quality recycling<sup>7</sup>.

There are many regulations applicable to both products and the waste they give rise to at the end of their use. It is critical to ensure that all EEE materials, including recycled plastics, meet multiple requirements for hazardous substance screening, safety and quality assessments, security of supply, economic viability, aesthetics, performance and consumer preference. It is still not easy to find sufficient supply of high quality post-consumer recycled plastics that meet all the technical, economic, legal and aesthetic requirements. *Specific and economically sustainable recycling technologies producing high quality post-consumer plastics is required to achieve a WEEE plastics circular economy.*

Using recycled plastics in electrical and electronic equipment creates additional challenges in complying with EU chemical substance regulations such as RoHS and REACH since recycled plastics content introduces a risk of unknown contaminants<sup>8</sup>. The WEEE recycling industry and

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<sup>4</sup> “POPs recycling contaminates children’s toys with toxic flame retardants”, Joseph Di Gangi, PhD Jitka Strakova Lee Bell, April 2017

<sup>5</sup> “No Brainer. The impact of chemicals on children’s brain development: a cause for concern and a need for action”. Chem Trust, March 2017

<sup>6</sup> Best practices in recycled plastics. DIGITALEUROPE

<sup>7</sup> Best practices in recycled plastics. DIGITALEUROPE

<sup>8</sup> Best practices in recycled plastics. DIGITALEUROPE

producers of electrical and electronic equipment often struggle to comply with all requirements that sometimes do not seem aligned. For example, whilst there are targets to achieve an efficient recovery of materials set by Directive 2012/19/EU, legislation on flame retardants and POPs may hinder the possibility to achieve such targets because of the banning of recovery of certain types of plastics containing substances of concern. ***Setting transition periods to adapt to such legislations will certainly help the industry find appropriate solutions.*** A practical example of this issue is plastics that contains DecaBDE flame retardants. This additive is present in old flat screen casing, old small household appliances plastics and cathode ray tube screen casing in concentrations ranging from 170 to 5,000 ppm. RoHS legislation bans the use of DecaBDE in new electrical and electronic products. At the same time, DecaBDE was recently included in Annex XVII of the REACH Regulation (although it did not affect EEE) and to the list of POPs under the Stockholm Convention. In parallel, the Directive on WEEE sets a recovery target of 80% for appliances that contain DecaBDE!

On the one hand, a harmonisation of European regulations laying down requirements on decontamination of substances of concern in plastic fractions risks exposing the ability of European industry to meet the mandatory recovery targets. On the other hand, the Circular Economy package seeks to promote high recovery and recycling rates by closing the loop. ***The alignment of regulations needs to provide the opportunity to the recycling industry to close the loop with post-consumer plastic from WEEE.***

***The WEEE Forum welcomes, in the scope of this Roadmap, benchmarking and research initiatives that will identify the difficulties involved in reaching regulatory targets for WEEE plastics and in reaching the Circular Economy principles.*** Specifically, we support studies to identify EEE and WEEE in which recovery targets set by Directive 2012/19/EU on WEEE will not be reached due to the regulatory barriers set by legislation concerning POPs and REACH as well as studies that seek to identify sustainable collection and recycling methodologies for closing the loop with WEEE plastics. Competent authorities should consider such information for the assessment of environmental compliance. Studies should comprise the overall impact (social, environmental and economic) of using recycled WEEE plastics.

## About the WEEE Forum a.i.s.b.l.

The WEEE Forum, set up in 2002, is a Brussels-based European not-for-profit association speaking for 33 not-for-profit electrical and electronic equipment waste (WEEE) producer compliance schemes – alternatively referred to as ‘producer responsibility organisations’ (PRO). The 33 PROs are based in Australia, Austria, Belgium, Czechia, Cyprus, Denmark, Estonia, Italy, Greece, France, Iceland, Ireland, Lithuania, the Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom. It is the biggest organisation of its kind in the world. In 2016, its member organisations reported collection and proper de-pollution and recycling of 2,100,000 tonnes of WEEE. Members in 2016: Amb3E, Appliances Recycling, ASEKOL, Australia New Zealand Recycling Platform, Ecodom, Eco-systèmes, Ecotic, ECOTIC, EES-Ringlus, EGIO, Electrocyclosis Cyprus, ElektroEko, Elektrowin, El-Kretsen, elretur, Environ, Fotokiklosi, Norsirk, Recipo, Recupel, Remedia, RENAS, Repic, Retela, RoRec, SENS e-Recycling, SWICO, UFH, Úrvinnslusjóður, Wecycle, WEEE Ireland, WEEE Malta and Zeos. Contact: [info@weee-forum.org](mailto:info@weee-forum.org). Website: [www.weee-forum.org](http://www.weee-forum.org). See also [15 Years On](#).