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GO!PHA response to the Waste Framework Directive (Revision) - An opportunity to increase the collection and utilisation of bio waste

GO!PHA is a non-profit engaged in promoting circular and sustainable materials such as PolyHydroxyAlkanoate (PHA) biopolymers that are renewable, biodegradable and compostable. We welcome the Commission's proposal to revise the Directive on waste. Notably, the renewed focus on addressing food waste within this directive reflects a keen awareness of the pressing challenges associated with the intricate nature of food waste management. This revision is an opportunity for the EU to demonstrate a commitment to fostering innovative solutions. In its pursuit of waste reduction, resource efficiency and adherence to the principles of Reduce, Reuse, and Recycle, there also arises a clear need to recognize bio-waste, which includes food waste, as a valuable resource.

Preventing food waste is essential, but it is equally important to distinguish between "food waste" and "food wastage." We support the amendments proposed by MEPs on the original text asking for *"differentiating "food wastage" (food which could have been eaten) from just "food waste" (non-edible parts) more distinctly*" and *"encouraging the use of food waste for biogas, bio-fuels."* Understanding this difference is key to implementing targeted strategies for minimising avoidable food waste and utilising overall food loss in the supply chain.

Maximising the use of compostable and biodegradable materials

GO!PHA believes that this revision is an opportunity to recognize and promote the value of the carbon in food and other organic waste. This can be achieved most effectively through the use of compostable and biodegradable materials as carriers for increasing the collection volume of bio waste, on-the-go food carriers and packaging of difficult to remove food content (coffee capsules, ketchup sachets, tea bags, etc.). The revision of the WFD should closely align with the Packaging and Packaging Waste Regulation (PPWR). The PPWR is concurrently working on establishing a mandatory list of biodegradable and compostable applications, such as tea bags and coffee capsules. These applications have a direct impact on food waste and have demonstrated benefits through life cycle assessment conducted as part of the PPWR revision[1]. This way, while simultaneously prohibiting the use of fossil based and

[1] IMPACT ASSESSMENT REPORT Accompanying the document Proposal for a Regulation of the European Parliament and the Council on packaging and packaging waste, amending Regulation (EU)

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non-compostable/non-biodegradable materials for food waste management, there can be increased collection, which would subsequently increase their use, putting more of the renewable carbon in these waste to reuse. In order to achieve this within this revision, we recommend the following:

- **Encourage separate collection: reduce plastics contamination in bio waste and vice versa**

Biowaste, comprising organic materials such as food waste, encounters contamination from non-biodegradable plastics, impeding efficient composting and recycling processes. Likewise, challenges emerge in the recycling of plastic streams due to organic contamination. To address this issue, comprehensive waste management strategies must be implemented, including public awareness campaigns to educate individuals on proper sorting practices. Hence, separate collection of food waste must be established to efficiently recover bio waste. Encouraging the use of biodegradable and compostable alternatives to traditional plastics, coupled with stringent regulations on plastic disposal, can further contribute to minimising plastic contamination in bio waste streams.

Milan, Italy: The City of Milan efficiently used biowaste and biobased materials to become a pioneer of successful food waste management in the EU. By implementing a separate food waste collection system **using compostable bags** in 2012, the city's collection rates from 2011 to 2015 rose by 17% - from 35% to 52% and reached a staggering 62.6% in 2020. In Milan, where efficient biowaste collection is achieved through the utilisation of compostable bags, waste is harnessed to generate biogas, resulting in an 8,800-ton reduction of CO2 emissions and decreased reliance on fossil fuels (source).

- **Increase bio waste collection for advanced (biorefinery) processing**

Efficient recovery of biowaste necessitates meticulous upstream organisation, encompassing the collection and sorting of all biowaste. Emphasising the prioritisation of local food loop supplies is crucial for harnessing biogas and other high-value bioproducts. This strategic approach ensures a comprehensive and sustainable utilisation of biowaste resources[2]. The EU must aim to tackle the rapid decomposition of organic matter, challenges in collection and

[2] The Circular Bio-Waste Management Handbook For Local Authorities

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sorting, and changing consumer behaviour and attitudes towards discarding food waste while concurrently advocating for the integration of bio-waste into the bioeconomy. This approach has the potential not only to alleviate the environmental repercussions of food waste but also to establish it as a valuable resource within the wider framework of sustainable resource management and principles of a circular economy.

Berlin, Germany: Through the efficient collection of over 60 percent of Berlin's residual and organic waste, of which food waste is a part, the Ruhleben biogas plant transforms waste into energy, contributing to a significant reduction in the city's reliance on fossil fuels. Processing 70,000 tonnes of bio-waste via anaerobic digestion, the plant produces biofuel that effectively powers the municipal collection vehicles. This sustainable approach not only saved 9,000 tonnes of CO2 emissions annually but also generated biogas without competing with food production for land and resources (source).

- **Extract value from food waste by making renewable and higher-value purpose products, like PHA**

Harnessing the latent value within food waste by the valorization of PHA entails the conversion of organic waste into Polyhydroxyalkanoates (PHA) by specific bacteria, often through fermentation. The derived PHA exhibits versatility in applications, serving as a substitute for biodegradable plastics, finding utility in medical products, and acting as a source for various biodegradable materials. This innovative approach not only addresses food waste management but also contributes to the development of sustainable alternatives across diverse industries.

London, UK: Within the scope of research conducted in WaysTUP![3], a European Union funded project, it unveiled novel value chains for harnessing urban biowaste, demonstrating its utilisation in the production of higher-value purpose products like PHA. By revalouring waste cooking oil, the project was able to produce polyhydroxyalkanoates (PHA), a biopolymer produced bacterial fermentation of the bio waste like cooking oil (source).

PHA is a higher-value product because it is a natural polymer that can act as a substitute for conventional plastics in several applications. They are derived from renewable resources and are synthesised by living organisms. Like other natural materials such as wood, cellulose,

[3] Catalogue of urban biowaste solutions and good practices examples: WaysTUP!

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proteins, and starch, PHA is produced in nature via microbial fermentation in microorganisms, animals, plants, and algae. Moreover, at the end of their lifecycle, they exhibit biodegradability, and hence compostability without generating persistent microparticles during their biodegradation[4]. Numerous companies and research organisations have over the last 5 decades developed and scaled biobased, compostable, and biodegradable materials and chemicals. Many have started operations on a commercial scale. However, their comprehensive adoption is lacking due to factors like investments and access to capital.

Expand the definition of recycling: Organic recycling is "recycling" of carbon

Across the EU, 45% of municipal waste is biowaste and as per the 2022 ECN data report on EU bio-waste, only 17% of municipal solid waste is organically recycled through composting and anaerobic digestion. The report also indicates that there has been no corresponding increase in bio-waste recycling. This revision must encourage member states to restructure and enhance their waste management infrastructure, specifically focusing on expanding composting and anaerobic digestion capacity. Encouraging composting and anaerobic digestion supports the transition to a circular economy by reducing waste and maximising the utility of organic materials. These processes have the potential to extract valuable resources from biowaste, including compost and biogas. These recovered resources can be employed to enhance soil quality and generate renewable energy, thereby closing the loop through biorefinery processes to produce high-value chemicals, chemical building blocks, and polymers. Additionally, composting is a type of "recycling" of carbon; this must be recognized across policies and regulations to address end-of-life and waste management.

[4] Which polymers are “natural polymers” in the sense of the single-use plastic ban?, nova-Institute, Hürth, Germany

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We look forward to engaging in a constructive dialogue with the Commission and other relevant stakeholders and are ready to answer any questions and meet with you to discuss our position at your convenience.

On behalf of **GO!**PHA,
Yours Sincerely,

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GO!PHA is a member-driven, non-profit initiative to accelerate the growth of the PHA industry.

PHA biopolymers are found in nature and have many of the functional properties and the processability of fossil plastics. PHA biopolymers provide a unique solution for reducing greenhouse gases by using renewable carbon-based raw materials and by offering diverse end-of-life options that include recycling and home & industrial composting. If littered, PHA biopolymers do not create microplastics, or environmental plastic pollution, since they biodegrade in soil, freshwater, and marine environments. Therefore, PHA offers a sustainable and circular approach to materials in our economy.

GO!PHA is a platform for learning, creating, and sharing experiences and knowledge on PHAbiopolymers and to facilitate the growth and proliferation of the PHA Industry and its downstream markets.

Start sharing, contributing, and collaborating to grow the PHA industry.

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