Environmental Protection Agency

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Comments on the Draft National Strategy to Prevent Plastic Pollution

Dear Madam or Sir,

We welcome the opportunity to provide input on the US EPA's draft national strategy to prevent plastic pollution (hereafter: Strategy). The Food Packaging Forum (FPF) is a charitable, science-based organization at the science policy interface. FPF is dedicated to raising awareness for hazardous chemicals in and environmental impacts caused by all types of food contact materials and articles (FCMs), including food packaging - a significant source of plastic pollution. Our work enables science-based decision making in the interest of protecting public health and the environment. As our expertise is mainly on chemicals in food packaging, we focus our remarks on this aspect, with additional comments on definitions, international regulations, supporting reuse, and microplastics.

1. Context and general remarks

Should specific types of plastic products be targeted for reduction or reuse in this strategy?

Applying EPA's Strategy objectives to food packaging would have significant immediate and knock-on effects to both human and environmental health.

Plastic packaging makes up 28% of municipal solid waste in the US (according to EPA figures from 2018), and food packaging strongly contributes to plastic pollution (Morales-Caselles et al. 2021). The creation of a plastics strategy is therefore an important opportunity for effective measures to curtail problematic food packaging. Accordingly, the **Strategy should set ambitious goals prioritizing reuse and then recycling in this sector**.

But food packaging is also of very high concern when it comes to the migration of chemicals. Indeed, our own work through the open access FCCmigex Database has shown that more than 1800 chemicals migrate from FCMs, and at least 388 of the chemicals used internationally to manufacture FCMs and/or that migrate from FCMs are hazardous (Zimmermann et al. 2022). The United Nations Environment Program recently reported 13,000 chemicals known to be used in plastics of which *at least* 3,200 are chemicals of concern.

In order to prevent harm to humans and the environment through the entire plastics life cycle, the presence of hazardous chemicals in plastics should be prevented. Taking this important step is especially crucial in the context of supporting a circular economy, as hazardous chemicals that continue to be used in the manufacture of food packaging (and other materials) will be perpetuated in reuse and recycling of said materials and products. As such, **the presence of hazardous chemicals in food packaging is an additional threat to humans and the environment, and a barrier to enabling the circular economy. Hazardous chemicals will hinder the successful implementation of the Strategy**.

2. Supporting reuse

Objective A1. Reduce the production and consumption of single-use, unrecyclable, or frequently littered plastic products

There are already many programs across the country trialing reuse/refill/return programs within supermarkets or for items like to-go cups and takeaway food packaging (Living Landscape of Reuse). The EPA can assist these programs by providing guidance to states and municipalities attempting to incorporate these programs/practices into daily life.

There are two areas the EPA in particular may be able to advise on – health codes and reuse standards.

FPF research has demonstrated 509 chemicals in repeat-use FCMs made of plastic, and 853 chemicals in recycled PET FCMs (Geueke et al. 2023). Some of these chemicals and chemical families are known to create long term effects that add up to potentially billions of dollars in public health costs. Phthalates for example are estimated to cost $39.9–47.1 billion in lost economic productivity in the US per year (Trasande, et al. 2021). While the annual disease burden and associated economic costs of exposure to long-chain PFAS in the US is estimated to be at least $5.52 billion and up to $62.6 billion (Obsekov, et al. 2022). EPA relatively recently completed calls for evidence on the phthalates and PFAS chemical groups. **Restricting the use of problematic chemicals and chemical families** in food contact materials, plastic consumer products, or in certain reuse or recycling scenarios could therefore be both a significant benefit to public health and the resulting economic costs across the production, use, and waste stages of the value chain. Washington State's Safer Products for Washington program may be a good example. be a good example.

Additionally, some restaurants are concerned about accepting containers from customers due to potential microbial and other contamination. The **EPA could work with or encourage FDA to create clear guidelines to lower health and safety concerns** – the state of Oregon is already working on this with the recently passed SB 545, which enables and provides guidance for accepting refillable containers at restaurants.

Objective C: Prevent trash and micro/nanoplastics from entering waterways

Supporting reuse programs would additionally lead to reducing microplastics that form during normal use of packaging which end up in food, drinks, and the environment (e.g., Zangmeister et al. 2022). Micro/nanoplastics are also created during the mechanical recycling process

(Brown et al. 2023). Evidence shows that **reducing production is the simplest way to slow the rate of pollution**.

Objective B2. Develop or expand capacity to maximize the reuse of materials

Government spending decisions could be one component of reducing demand for single-use materials. Good systems require robust infrastructure. The government of France created a national policy focusing on reuse which included a 50 million Euro **fund to support reuse projects and related infrastructure in the country**.

3. International regulation

Objective A: Reduce pollution during plastic production

The United States is one of the largest plastic waste producers per capita (Law et al. 2020). If the EPA wishes to "address environmental justice and climate change" one effective way to do so is to limit plastic production from fossil carbon feedstock by clearly supporting a robust and binding treaty before and during the upcoming INC-3 meeting in Nairobi, Kenya.

Objective B6. Explore possible ratification of the Basel Convention

The United States government is already a signatory to the Basel Convention, but it has not been ratified in congress to become a Party to the convention. Relatively recent bi-partisan actions in the US congress such as the Save Our Seas 2.0 Act of 2020, the special hearing on chemical pollutants in December 2022, and increased concern over the FDA food branch demonstrate a willingness to engage in topics concerning plastics and consumer health and safety. EPA could lend its support to continued federal actions such as ratifying the Basel Convention.

4. Defining terms

Objective B3. Facilitate more effective composting and degradation of certified compostable products

Sufficiently addressing hazardous chemicals: All compostable/biodegradable packaging is by definition designed to enter the organic waste stream and become part of the open environment. All compostable packaging may be regarded as a material in contact with food. Therefore, to avoid exposure of humans and the environment to hazardous chemicals, all compostable plastics need to be inherently safe. The Strategy currently lacks a clear statement that compostable packaging needs to be free of hazardous chemicals to prevent negative impacts on human and environmental health. Even plastic decomposition standards ASTM D6400 and D6868 do not have clear guidelines in the matter.

Time frame of decomposition: The EPA currently states that decomposition of a plastic must "occur at a rate similar to the other elements of the material being composted (within 6 months)." But this definition is insufficient as it 1) is limited to industrial composting – which

confuses consumers, and 2) industrial composting has a turnover rate of 4-12 weeks (e.g., EPA: types of composting) - making even plastics that fit this definition still problematic. To avoid the presence of packaging waste and/or its fragments in the finished compost, the time frame and degradation conditions (e.g., temperature, moisture) need to be aligned with established commercial practices.

Demonstrating safety and complete decomposition: Regarding the two previous points, standardized methods that allow assessing and demonstrating the safety of compostable packaging and its complete decomposition under industrially controlled conditions, in home composting conditions, and/or in the environment should be defined. There are multiple instances of packaging labeled with some decomposition level that when tested does not pass (e.g., Royer et al. 2023, Lott et al. 2021). It needs to be the obligation of the compostable packaging manufacturer to provide information on complete decomposition (i.e., full mineralization) and safety before the product is placed on the market.

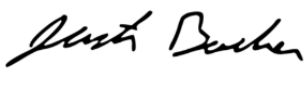
Additional information or recommendations for EPA

The most effective way to restrict the number of chemicals that migrate out of FCMs (and other consumer products) at any point in their life cycle is to **support the use of materials that are inert**, meaning that they almost do not interact chemically with the foods and environments they are brought into contact with. Inert materials have very low overall migration, and they also do not absorb chemical contaminants. Such materials are most suitable for reuse as they will not become contaminated by prior life stage residues (like food pigments and flavors, detergent chemicals, or other contaminants).

While most FCMs on the market have overall migration levels well below the current threshold, there is a lack of robust analytical approaches with low detection limits that are suitable for routine measurements and for enforcement. Therefore, new approaches are needed for both defining and measuring FCM inertness that are sufficiently protective of human health. The EPA could make an important contribution to this issue by **providing a definition of inertness for reusable food packaging, and by investing into research and development on this matter**.

Sincerely,





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