

# Busting the Sorting Myth

Unlocking the full value of our plastic waste will go a long way towards helping organizations honor their commitment to increase the level of recycled material they use in their packaging.

■ By Professor Edward Kosior

According to a recent report by The PEW Trusts, “Breaking the Plastic Wave,” our current recycling commitments are inadequate for the scale of the challenge we face if we are to avoid drowning our oceans in plastic and overheating our planet.

The report highlights the fact that the current value of global investments in the plastic industry between 2021 and 2040 could be reduced from US\$2.5 trillion (±US\$800 billion) to US\$1.2 trillion (±US\$300 billion), but this will require a substantial shift of investment away from the production and conversion of virgin plastic.

Those organizations producing and using virgin plastics are faced with a transformational choice that could tip the balance. Companies ahead of the curve will be those who opt to unlock value from a circular economy that derives revenue from the circulation of materials rather than the extraction and conversion of fossil fuels.

Thankfully, we are now seeing a surge of such enterprises focusing on improving materials and design through to cutting-edge sorting and recycling technologies, as well as smart collection and supply chain management systems.

### Sorting As Part of the Journey Towards a Circular Economy

There is a misconception currently pervading industry that relates to sorting. With the current focus on innovative sorting processes that can

identify additional factors such as food-grade or non-food-grade beside the polymer, it is vital to emphasize that sorting alone will not solve our recycling woes. The fact is that sorting is only part of the journey towards a true circular economy, where we use our resources sustainably and stop creating unmanageable waste.

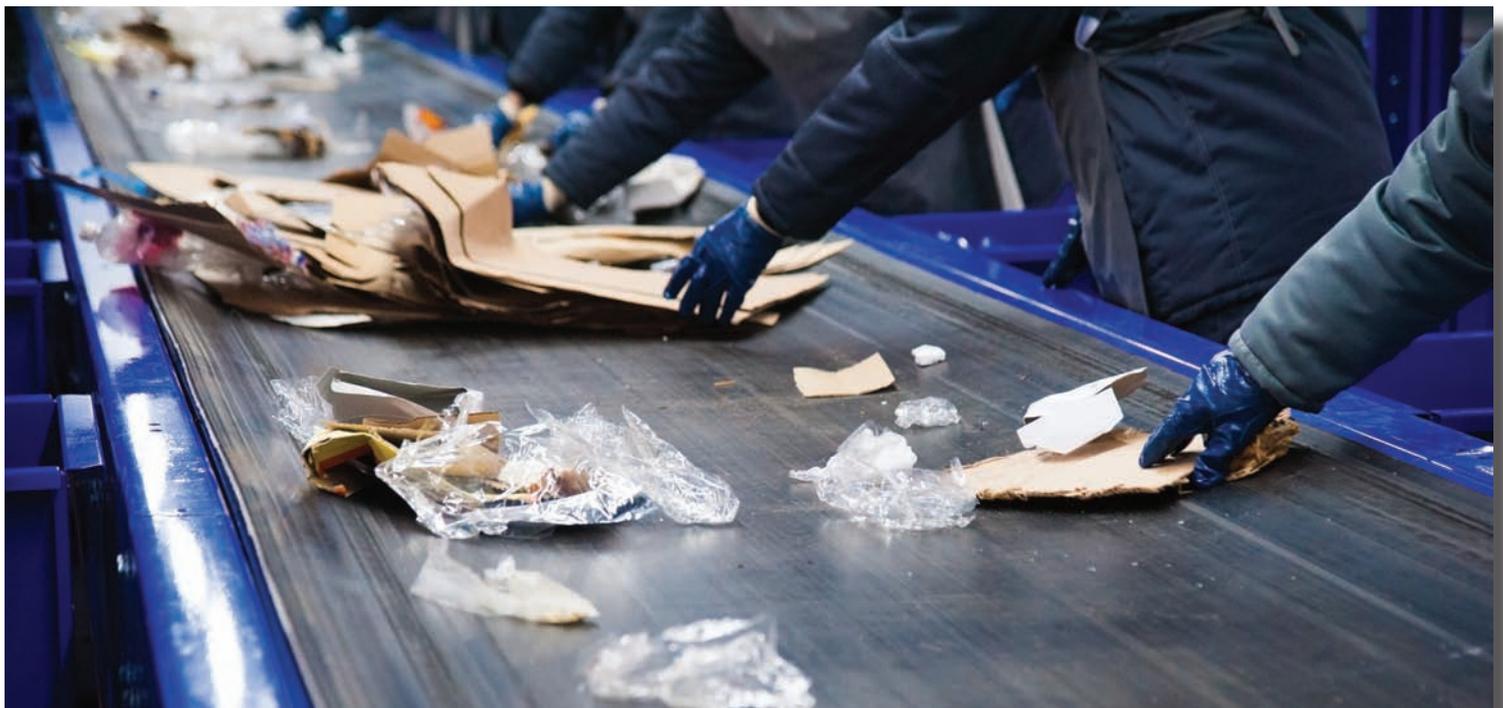
Of course, sorting is a vital facet of the entire process, but we need to go way beyond merely sorting our waste if we are to make any meaningful shift in the way we manage our current waste levels. If we create multiple sub-categories of packaging in response to the perception that sorting will have the capacity to create narrower fractions of materials, then the economics will diminish, and issues of cross-contamination will increase.

As organizations seek to avoid the forthcoming hefty plastic packaging taxes that are looming, sorting appears to be grabbing the headlines as the way forward. The debate needs to center around which type of (complete) recycling process will deliver the best results.

### Low-Value Waste

Ultimately, regardless of how waste is actually identified and sorted, we will still end up with a pile of well-sorted plastic that is of low value unless it can be properly re-used, and this requires cutting-edge extrusion, filtration and decontamination.

If we are to make better use of our plastic packaging waste, we need



to turn it back into high-quality recycled mono-polymers that can be re-used in new products. Brand owners and retailers are desperately short of food-grade recycled plastic.

### Curbing Dependence on Virgin Materials

Any organization involved in FMCG (Fast Moving Consumer Goods) knows full well that they are going to have to drastically curb their dependence on virgin plastic if they are to comply with the new plastic packaging laws.

To achieve this will require having a vast and new supply of food-grade recycled Polypropylene (PP) to turn into the tubs, pots and trays they are using since PP is one of the largest volume plastics used globally.

Whether we opt for chemical markers (such as fluorescent marker-based PRISM) or digital watermarks, the very fact that we can now enhance the sorting and identification processes is a key step in the right direction.

### One Half of the Solution

Decontamination is the next crucial phase to be able to turn our well sorted waste into valuable recyclates such as food-grade rPP (recycled Polypropylene), food grade rHDPE (recycled High-Density polyethylene) and food grade PET. Achieving the vision of near-zero plastic waste requires technological advances, brave new thinking, innovative business models as well as accelerating upstream innovation.

It has taken eight years of intense research and commercial trials to achieve a powerful and unique decontamination process for food-grade recycled PP that is shortly going for European Food Safety Authority and USFDA approval. This is, in effect, the missing link that will finally close the loop on a food-grade plastic that has been “missing-in-action” to date.

In Europe, PP accounts for 10 million tons per year with 40 percent (4 million tons per year) used for consumer packaging, which largely goes unrecycled or to low-value applications. Certainly, the fact that

EU legislation is soon to apply the €800/ton tax for single use plastics with less than 30 percent recycled content should add to brand owners’ motivation to readdress their recycling commitments.

Unlocking the full value of our plastic waste will go a long way towards helping organizations honor their commitment to increase the level of recycled material they use in their packaging—better yet, this kind of coherent recycling strategy will have enormous impact on reducing post-consumer waste.

We urgently need to focus on closing the plastic loop by taking each facet of the process from collection and sorting through to decontamination to ensure a transformational shift occurs. It is imperative that we acknowledge we can start making paradigm changes right now with the technologies we already have at our fingertips and this must embrace the entire recycling process. We need to change “business as usual” to avoid the worst consequences. | **WA**

*Professor Edward Kosior's expertise in the plastics recycling sector spans 46 years, split between 23 years as an academic and 23 years working in plastic packaging recycling. He has been instrumental in designing numerous modern recycling plants and has achieved a number of patented recycling breakthroughs. In 2004, Professor Kosior founded Nextek Ltd. (London, UK) to provide consultancy services to assist in the strategic approaches to sustainable packaging, waste reduction and minimal lifecycle impact. He is involved with many industry associations, universities, and research organizations and is a Fellow of the Society of Plastics Engineering and Fellow of the Institute of Materials, which awarded him the Prince Philip Medal for “Polymers in the Service of Man” in 2019. He also provides support to organizations such as the Earth Champions Foundation, Plastics Oceans, PEW Foundation Trust on the Project “Stopping Ocean Plastics” and is the founder of NEXTLOOP, the multi-client project aimed at closing the loop on food-grade PP. For more information, visit [www.nextek.org](http://www.nextek.org) or [www.nextloop.com](http://www.nextloop.com).*

#### Resource

- [www.pewtrusts.org/en/research-and-analysis/articles/2020/07/23/breaking-the-plastic-wave-top-findings](http://www.pewtrusts.org/en/research-and-analysis/articles/2020/07/23/breaking-the-plastic-wave-top-findings)



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