

June 20, 2018

FAQ Materials Recovery for the Future (MRFF) Pilot Demonstration Project

What is Materials Recovery for the Future (MRFF)?

Materials Recovery for the Future or MRFF, is an industry collaborative administered by the Foundation for Chemistry Research & Initiatives. The MRFF project and partners are working to increase and enhance recycling options for flexible plastic packaging. The project vision is that flexible packaging is recycled, and the recovery community captures value from it.

Who is involved with the MRFF project?

The MRFF industry collaborative is funded, led, and executed by the following companies and organizations: [The Procter & Gamble Company](#), [Target](#), [The Dow Chemical Company](#), [PepsiCo](#), [Nestlé USA](#), [Nestlé Purina PetCare](#), [Amcor](#), and the [American Chemistry Council](#). Other members include the [Flexible Packaging Association](#), [LyondellBasell Industries](#), [The Plastics Industry Association](#), [Plum Organics](#), [Sealed Air](#), [SC Johnson](#), the [Canadian Plastics Industry Association](#), and the [Association of Plastic Recyclers](#). The research program is excited to announce [Chevron Phillips Chemical Company](#) as well as [J.P. Mascaro & Sons](#), and [Van Dyk Recycling Solutions](#) as new members. Resource Recycling Systems (RRS) developed the test methodology, pilot design, end market and stakeholder engagement work streams of the research program.

Why is flexible plastic packaging the focus of the MRFF project?

Flexible plastic packaging is one of the most prevalent form of consumer packaging in use today, and while it has potential to be made into new products, it is largely being landfilled. Only 1% is recycled today. When consumers wishfully recycle it in their curbside carts, it challenges traditional material recovery facility (MRF) single stream sorting systems, where it often becomes a contaminant of other recyclables. Flexible plastic packaging has many sustainability benefits and the plastic packaging itself is a valuable material that should be captured for recycling rather than going to landfill.

What are examples of flexible plastic packaging?

Examples of flexible plastic packaging include the following: granola pouches, resealable food storage bags, tee-shirt bags, pet food bags, spouted baby food pouches, chip bags, and product overwrap.

Why is this project important/significant – what will it accomplish?

Better management of plastics end of life. The pilot project will demonstrate a new automated system design for large MRFs to sort flexible plastic packaging at specified quality and purity levels, to produce a recycled plastic feedstock for product manufacturing. In addition to technical sorting, the project will prove from both an economic and environmental standpoint whether flexible plastic packaging can effectively and efficiently be collected, sorted into bales, and sold effectively through traditional curbside recycling programs.

What is this project important to MRFs now?

High quality product bales are more important than ever to MRFs due to global recycling market disruption and new quality standards. The MRFF project approach - utilizing a scientific method, robust economic analysis, and transparently documenting every step – provides a new collaborative process for accepting a material into single stream recycling. We recognize it is important to protect MRF paper streams and improve their quality while testing how to most efficiently add flexible plastic packaging.

What is the proposed solution to the challenge of recycling flexible plastic packaging?

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In order to efficiently and effectively sort flexible plastic packaging for recycling, the MRFF project will be proving out a technology solution identified through a multiple-year testing program with RRS and the recycling industry. Partnership with TotalRecycle, where the pilot will take place, was a result of a systematic vetting process to identify a MRF partner who felt the pilot aligned with their business objectives (e.g., commitment to sustainability, innovation, and customer demand) and met a series of criteria. TotalRecycle is a large MRF using automated sorting to process a minimum of 20 tons per hour of material, which was also a consideration.

Is there value in collecting and sorting flexible plastic packaging?

Our hypothesis is yes, there is value in reclaiming flexible plastic packaging for recycling. In earlier phases of research RRS modeled the net system costs to upgrade a MRF to accept flexible plastic packaging and found the costs were reasonable for communities wishing to recycle the material. Flexible packaging is typically sorted out as a contaminant at MRFs, and they typically expend additional labor hours and landfill tip fees to remove and dispose of the material rather than recycle it. Our goal is to demonstrate this packaging can be sorted and marketed as a valuable commodity along with other recyclables.

What end markets exist for flexible plastic packaging?

End markets are key, and MRFF project research conducted over the past year includes end market identification and performance testing. We are actively researching and engaging end market outlets that have a use for the recycled flexible product bale, and have identified a range of applications including durable goods, green building materials, work-in-process items, and injection molded consumer products.

What happens at the end of the pilot demonstration phase?

The MRFF project is a catalyst for a sustained commitment to collecting, sorting and recycling flexible plastic packaging. Once the proof-of-concept pilot is complete – meaning we've demonstrated enhanced beneficial recovery of flexible plastic packaging, providing value to the MRF and ultimately the community--the MRF will continue to utilize the equipment. MRFF will also publish a report on the findings for use by communities and MRFs interested in recycling this material.

How can the findings from this project and the pilot demonstration be applied to other material recovery facilities (MRFs)?

Following the proof-of-concept pilot, we intend to share the findings with key stakeholders, such as recycling companies and haulers, local and state governments, and recycling advocates. The pilot report will provide insight into the economic and environmental costs and benefits of recycling flexible plastic packaging in a traditional residential curbside recycling program. It will also quantify improvements to the quality of paper recycling.

Who is paying for the MRF pilot equipment upgrade to accept flexible plastic packaging?

Pilots always carry a degree of risk. Given this is the first ever proof-of concept pilot, funding provided by J.P. Mascaro & Sons was augmented by a significant grant from MRFF sponsors. It is truly a partnership between the MRF and other key members of the packaging recovery value chain, including resin producers, converters, brands, retailers and trade associations.