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Plastics recycling increasingly sophisticated

By Tom Watson

Special to The Seattle Times

Tossing that plastic juice bottle into your home recycling bin is just the beginning. Beyond the bin, when the collected materials get processed, plastics recycling increasingly resembles rocket science.

New high-tech sorting and processing methods for recycling are part of the solution to plastic's chronic waste problem. The current national recycling rate for plastic languishes at 7 percent, compared with 55 percent for paper, 35 percent for metals and 23 percent for glass.

Q: So will I be able to recycle more types of plastics?

A: That's the idea. For example, the use of optical-sorting equipment allowed Seattle's residential-recycling program to increase its acceptance of plastic items last year. Optical sorters use spectroscopy or X-rays to determine what type of plastic the collected materials are made of. With spectroscopy, light beams are reflected by each plastic's distinctive wavelength to identify the material.

These futuristic processing technologies are necessary because plastics themselves have become much more complex, and different types of recycled plastics usually must be sorted to make them more marketable. A few plastics, such as the kind used for pop bottles, have a relatively high value for recycling, and processors need to prevent other plastics from contaminating those materials.

Q: Are there any problems with these advanced technologies?

A: They are expensive, with an optical sorter typically costing \$100,000 to \$350,000. The plastics industry promotes high-tech processing of recyclables and increased recycling collection by governments partly because recycling does not reduce the public's use of plastics, compared with other green approaches.

Representing the opposing view, many environmental advocates support reduced consumption of plastic products and packaging. Ubiquitous single-use water bottles, for instance, can be replaced by reusable water bottles.

Q: Why do recycling programs in different cities, even adjacent to each other, accept different plastic items?

A: Most cities have contracts with companies for recycling collection, and those companies must find end markets for every material they agree to collect. If costly sorting equipment is used to improve the marketability of materials, that may increase the contract's cost.

Q: Many plastic packages and products have a number surrounded by the "chasing-arrows" recycling logo. Those all can be recycled, can't they?

A: No. They may be technically recyclable, but many items with those plastics-industry-mandated symbols are not accepted by residential-recycling programs, usually because of a lack of markets. Even plastic items with the same number may need to be processed separately for recycling, if they have certain additives, for example. Be sure to check with your city or recycling hauler to confirm which materials they accept.

Q: What about plastic bags?

A: As with single-use water bottles, reducing the consumption of plastic-grocery bags is decidedly not rocket science. Many stores sell inexpensive reusable shopping bags, and they are frequently given away at community events.

When you do accumulate plastic bags, use them again if you can or recycle them. Although some residential-recycling programs take them, the best way to recycle your plastic bags is to bring them to a participating grocery store, which reduces contamination and other problems in collection.

King County's Bag Your Bags website (www.bagyourbags.com) has more information and lists stores that accept plastic bags for recycling.

Plastic bags have become a hot-button environmental issue. A ban on plastic shopping bags in Edmonds, the first such law in the state, is scheduled to take effect Aug. 27.

Q: Does plastic packaging have any environmental advantages?

A: Plastic's best green selling point is its lighter weight. Other types of packaging, such as paper and glass, have their own green qualities, including easier recyclability.

Plastic needs to get out of the dumps, and recycling helps. But we'll make a bigger difference if we simply use less.

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