

A New Hierarchy for Packaging: Reuse, Reduce, Recycle

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Many are familiar with the U.S. EPA's waste reduction hierarchy: Reduce, reuse, recycle. This hierarchy reflects a focus on reducing postconsumer solid waste. Life cycle studies consider not only solid waste but also resource use, greenhouse gas, and other emissions over the life cycle of a product system. Rather than focusing on any single environmental burden, the life cycle approach leads to a more comprehensive understanding of a product system's environmental profile. Some recent life cycle studies on reusable packaging products suggest that for certain types of packaging the hierarchy should be changed to "Reuse, reduce, recycle."

In the past, reusable products were often much heavier than alternative single-use products, requiring more energy for transportation steps in addition to energy-intensive washing or reconditioning processes to prepare them for each reuse (for example, refillable glass soda bottles, institutional coffee mugs). The current wave of reusable packaging products emerging in the marketplace are still heavier than single-use alternatives, but to a lesser degree, and can be reused many times in a closed-loop system. As a result, the savings in raw materials are sufficient to offset the environmental burdens for backhauling and reconditioning, even when compared to alternative single-use products with recycled content that are recycled at end of life. Multiple reuses of a product results in the ultimate reduction of material requirements.

The current hierarchy for reduce and recycle is reinforced in another Franklin Associates packaging study in which both size and weight emerged as the dominant factors in evaluating the environmental burdens for competing packaging systems used for shipping soft goods. The flexible packages in this study (shipping bags) were so much smaller and lighter than the competing packages (corrugated boxes with various types of dunnage) that in all cases the shipping bags showed significantly lower environmental burdens than the boxes with dunnage, regardless of the recycled content of the materials used.