

# A Case for Refillables?

Learning from the German Experience

I have a confession to make. I have always supported refillable bottles, but deep down, I never *really* thought the idea was economically viable in our global marketplace. *However*, after my trip to Germany — where refillables are available for nearly all beverages — (in all shapes, sizes, glass or PET), I believe the case can be made for refillables today.

What is especially impressive is that refillable glass bottles have an average of 50 lives, while refillable PET usually lasts up to 25 servings. The plastic crates last for 100 trips. This begs the question about Canadian brewers and their industry standard glass bottle that only has an average of 15 lives. Why the gap?

The difference is a cultural one. Germans are un-phased by the physical scars of reuse, like the white erosion rings that develop at the top and bottom of a glass bottle, or the many scratches that can render a PET

bottle dull and opaque. Canadian brewers have no choice but to limit the potential life of an industry standard beer bottle in order to compete against their gleaming competition.

Today, in Germany, more than 85 per cent of all beer, 37 per cent of mineral water, 34 per cent of soft drinks, and 10 per cent of fruit juices are sold in refillable bottles. Refillables bear a lower deposit level of eight and 15 Eurocents (worth 13 and 24 cents Canadian) versus the 25 Eurocent deposit on non-refillables. Wholesalers play a critical role in the refillable system, by purchasing, storing and distributing full goods to retailers, and from the back end; collecting and re-distributing empty refillables back to bottlers.

In a study by the IFEU Institute in Germany, both refillable PET and glass bottles ranked more favorably compared to non-refillable aluminum cans and PET in terms of: material consumption, global warming potential, acidification and summer smog. The German Packaging Institute reports the difference in greenhouse gas emissions between all non-alcohol beverages packaged in refillable containers versus single-serve containers is over one million tonnes of CO<sub>2</sub>e.

The *Herald Tribune* (“Putting pollution costs on the table,” April 26, 2008) examined the life cycle impact of two bottles of wine consumed in New York City. The first bottle came from California transported by truck, and the other from France shipped and then trucked. Interestingly, the California bottle resulted in almost double the carbon footprint (2,514 grams of CO<sub>2</sub>e per bottle), primarily due to the impact of transportation, which accounts for a whopping 57 per cent of the total footprint. Containers (barrel and bottle) accounts for an additional 25 per cent of the footprint. While lower in terms of greenhouse gas emissions, the French wine still resulted in 1,371 grams of CO<sub>2</sub>e per bottle, of which transportation accounted for 33 per cent and containers came to 35 per cent of the footprint.

As crude oil hovers at high levels, the economics of modern refillable solutions are beginning to look more attractive. Imagine the possibilities...

- Large retailers offering non-alcohol drinks on-tap, with a built-in volume counter. This would allow consumers to either bring their own container from home, or buy one in-store. Retailers would invest in an in-store carbonation/ mixing system (like those found in large bars, movie theatres etc.) and would pipe-in local water. Less costs, less shelf space, and an ideal option for high volume buyers on a budget.
- Ship foreign beverages in bulk and have them filled locally in standard refillable bottles.
- Promote local beverage production, like wine and beer, which can



In Germany even small plastic Coca Cola bottles get refilled 15-25 times.

# LESSONS FROM EUROPE




In Germany, 85 per cent of all beer is sold in refillable bottles.

One refillable glass bottle can replace 50 containers, but offer the same volume of beer.

stimulate the economics for a refills program in the region.

- Utilize reverse logistic (back-hauling) to eliminate additional freight associated with container transportation.

We are facing interesting times. Several municipalities and businesses are considering bottled water bans, the cost of raw materials continues to rise, and the high cost transportation is making local production more attractive. Those that are able to think beyond the classic one-way distribution model, to one that reduces energy at all stages of production, and ultimately delivers the refreshment of choice to the consumer, may indeed end-up on top.



Perhaps a case can be made for refills. This is something that Canada can learn from Europe.

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# COVER STORY

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Environment Canada has undertaken extensive life-cycle analyses to measure the inputs and outputs from cradle-to-grave of various materials. The results can be applied to beverage container diversion in order to quantify the environmental benefits associated with those programs. Table 2 presents a summary of the environmental benefits of beverage reuse and recycling (glass, PET, HDPE and aluminum) for Canada.

### Increasing costs, performance

Canada's relatively high handling fees for depots, and the high cost of fuel will surely result in overall cost increases, in spite of the large revenues from high-value secondary material. While recycling markets are strong for traditional beverage materials, newer contain-

er materials like pouches, poly cups, aseptic boxes, polystyrene and paperboard cups are difficult to market and may require long transportation distances to recyclers in the U.S. or off-shore.

Overall, capture rates are declining. This is symptomatic of the diminishing value of deposits which have not kept pace with inflation. In jurisdictions with residential recycling for beverage containers, lack of progress is due primarily to the inherent difficulties of multi-residential recycling and recycling of away-from-home or "on-the-go" beverage consumption.

With the current economic and environmental interest in the collection of beverage containers, opportunities abound. Small-scale, affordable compaction technology, like the Envirofactor (see June/July 2008 edition) can

have a dramatic impact on shipping and labor costs. As awareness grows around the associated benefits of reducing greenhouse gases, the level of interest in recycling is greater than ever. Comprehensive data is readily available, which means those involved can better understand the full life-cycle implications on carbon dioxide emissions, as well as other pollutants.

In a country where over 10 billion beverage containers are sold each year, the data on climate change mitigation from recycling aluminum PET, steel and glass clearly shows that recycling beverage containers is a priority. ♻️

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## Working together on waste diversion projects

- Private and public sectors
- Residential, IC&I and C&D waste streams
- Waste diversion planning
- Waste characterization
- Composting and mechanical biological treatment
- Recycling
- Life Cycle Assessment
- Carbon Management



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