

EPR: The Next Tsunami to Hit North America's Solid Waste Management?

The demise of local recycling with the implementation of EPR programs may be overstated. The real issue is to develop EPR programs that balance the needs of all the stakeholders in the overall recycling program to improve success.

■ By Marc J. Rogoff, Ph.D.

In recent years, procurers and manufacturers have developed a great many industry programs to help reduce the lifecycle impacts of various consumer products and packaging. There also has been a movement by local governments, states and provinces in North America to help shift the responsibility from taxpayers and ratepayers to these producers. Not surprisingly, the merits of this movement have been hotly debated in some quarters, particularly in light of the current recycling infrastructure investments already made by local governments. The terms “extended producer responsibility” and “product stewardship” are also bandied about with little, if any, agreement by many of what these terms actually mean. This article will attempt to provide some guidance on this subject for those of us involved in solid waste management.

What is Product Stewardship?

Product stewardship is oftentimes defined as the act of restructuring the way manufacturers design and market products so that they optimize recycling of materials, minimize packaging, and actually design their products in a way that will enable complete recycling of the used product in lieu of disposing the used product. It is essentially a “cradle-to-cradle” strategy instead of a “cradle-to-grave” approach.

The Product Stewardship Institute (PSI) is a U.S., non-profit membership-based organization, located in Boston. PSI works with state and local government agencies to partner with manufacturers, retailers, environmental groups, federal agencies and other key stakeholders to reduce the health and environmental impacts of consumer products. PSI takes a unique product stewardship approach to solving waste management problems by encouraging product design changes and mediating stakeholder dialogues. Several states have or are considering initiatives and laws that would encourage or require manufacturers to improve their product designs in this manner.

Economic prosperity has increased per capita spending over the past several years and increased the need for local governments to provide expanded recycling and disposal programs. Product stewardship is a concept designed to alleviate the burden on local governments of end-of-life product management. Product stewardship is a product-centered approach that emphasizes a shared responsibility for reducing the environmental impacts of products. This approach calls on the various waste generators to help minimize their wastes:

- *Manufacturers:* To reduce use of toxic substances, to design for durability, reuse and recyclability, and to take increasing responsibility for the end-of-life management of products they produce.
- *Retailers:* To use product providers who offer greater environmental performance, to educate consumers on environmentally preferable products and to enable consumers to return products for recycling.
- *Consumers:* To make responsible buying choices that consider environmental impacts, to purchase and use products efficiently, and to recycle the products they no longer need.

- *Government:* To launch cooperative efforts with industry, to use market leverage through purchasing programs for development of products with stronger environmental attributes and to develop product stewardship legislation for selected products.

The principles of product stewardship recommend that a role of government is to provide leadership in promoting the practices of product stewardship through procurement and market development. Environmentally Preferable Purchasing (EPP) is a practice that can be used to fulfill this role. EPP involves purchasing products or services that have reduced negative effects on human health and the environment when compared with competing products or services that serve the same purpose. They include products that have recycled content, reduce waste, use less energy, are less toxic and are more durable.

| Company or Organization | Program |
|--------------------------------|---|
| Coca-Cola Company | <ul style="list-style-type: none"> • Municipal grants for beverage collection bins • Recycling education |
| Pepsi Cola Company | <ul style="list-style-type: none"> • Dream Machine Initiative to collect beverage containers at away-from-home locations (bins and kiosks) • Reduce weight of Aquafina brand plastic bottle |
| Target Stores | <ul style="list-style-type: none"> • Store recycling bins for cans, glass containers, plastic bottles and plastic bags |
| British Columbia Dairy Council | <ul style="list-style-type: none"> • Deposit return locations for dairy containers |
| Publix Grocery | <ul style="list-style-type: none"> • Store recycling bins for cans, glass containers, plastic bottles and plastic bags |
| Best Buy and Staples | <ul style="list-style-type: none"> • Store recycling bins for toner cartridges, E-waste and cell phones |
| Walmart | <ul style="list-style-type: none"> • Pressed suppliers like Proctor and Gamble to reduce packaging |
| Proctor and Gamble | <ul style="list-style-type: none"> • Increased concentration of Tide laundry detergent to sell in smaller packages |
| Zephyrhills Water | <ul style="list-style-type: none"> • Redesigned water bottles for reduced size of cap and plastic in bottle |

Table 1: Illustrative voluntary product stewardship programs. Table courtesy of Marc Rogoff, 2013.

| Manufacturer/Trade Association Description of Program | |
|---|---|
| Alarm Recycle | BC residents have been able to drop off their smoke and CO alarms for recycling at Alarm Recycle drop-off locations across BC. |
| BC Used Oil Management Association | A private Environmental Handling Charge (EHC) is assessed on new oil, filters and plastic oil containers to fund the recycling of antifreeze, lubricating oil, oil filters and oil containers. |
| Brewers Association of Canada | Supports the recycling of beer containers at drop off locations throughout BC. |
| Canada Battery Association (CBA) | The CBA operates over 175 return collection Facilities in BC for consumer lead-acid batteries and 21 warehouse locations for the larger industrial lead-acid batteries. |
| Call2Recycle | Call2Recycle accepts all batteries and cell phones 5 kg each or less. |
| Electronics Products Recycling Association | Encorp Pacific operates drop off locations |
| ElectroRecycle | Accepts a variety of 120 different small consumer appliances across BC. |
| Encorp Pacific Canada | Recovers non-alcohol beverage containers |
| Light Recycle | Recycling of residential use lighting products at collection sites across the Province. Light Recycle program has recently expanded to all lamps, ballasts and fixtures from the institutional, commercial and industrial sectors |
| Post Consumer Pharmaceutical Stewardship Association | Safe disposal of leftover medicines returned by the public to local government programs |
| Multi Materials BC | Assume responsibility for managing residential packaging and printed paper recycling on behalf of industry. |
| Outdoor Power Equipment Institute of Canada | Recycling program for electrical outdoor power equipment Product Care Paint, flammable liquids, domestic pesticides and gasoline |
| Recycle My Cell | Recycle My Cell links participating cell phone recycling programs together for drop off or mail of used equipment. |
| Switch the 'Stat | A trade association recycling program for thermostats |
| TELUS Return and Recycle Program | Any mobile phone, battery, or accessory, irrespective of carrier, can be dropped off at Trade-In location. |
| Tire Stewardship BC | For every new tire sold, the retailer remits to TSBC an Advance Disposal Fee (ADF), commonly referred to as an eco-fee. All fees collected go exclusively towards the operation of the scrap tire recycling program and are used primarily to pay for transporting and recycling BC's scrap tires |

Table 2: EPR programs in British Columbia. Table courtesy of the Recycling Council of British Columbia (RCBC), 2014.

Table 1, page 43, provides details on a few examples of programs undertaken by North American producers of consumer packaged goods. Local, state and federal government agencies can and do use their tremendous purchasing power to influence the products that manufacturers bring to the marketplace. In the last decade or so, most efforts have focused on encouraging procurement of products made from recycled content. The goal of these procurement programs is to create viable, long-term markets for recovered materials. The EPA has developed a list of designated products and associated recycled content recommendations for federal agencies to use when making purchases. These are known as Comprehensive Procurement Guidelines.

To date, EPA has developed more than 60 guidelines that fall into the general categories of construction products, landscaping products, non-paper office products, paper and paper products, park and recreation products, transportation products, vehicular products and miscellaneous products. For example, federal agencies are instructed to buy printing or writing paper that contains at least 30 percent post-consumer recycled content.

What is Extended Producer Responsibility?

In recent years, extended producer responsibility (EPR) has emerged as a general policy approach which aims to shift the cost of managing consumer packaging from local solid waste agencies to those manufacturers who are producing these products. As its name implies, EPR extends the role of manufacturers to include the recovery and recycling of materials and financial responsibility for public operating expenses. Those promoting EPR emphasize four major advantages for EPR as a preferred policy approach for end-of-life management for packaging and printed paper:

1. EPR causes producers to change packaging design and selection, leading to increased recyclability and/or less packaging use
2. EPR provides additional funds for recycling programs, resulting in higher recycling rates
3. EPR improves recycling program efficiency, leading to less cost, which provides a benefit to society

4. EPR results in a fairer system of waste management in which individual consumers pay the cost of their own consumption, rather than general taxpayers

In the U.S., more than 70 producer responsibility laws have been promulgated in 32 states including 10 categories of consumer products such as: automobile batteries, mobile phones, paint, pesticide containers, carpet, electronics, thermostats and fluorescent lamps. In recent years, there has been a rising tide of states, which have passed E-waste EPRs as a consequence of the rapid replacement of these products. Several states have enacted landfill bans, which have had an increasing positive impact of product recycling. However, as of this date, no state has enacted an EPR law of programs extending to packaging or printed paper.

As a result of failed voluntary packaging take back programs in Europe, public policies were instituted to require manufacturers to be responsible for these materials. In 1994, the EU enacted the Packaging Waste Directive (94/62/EC) requiring its member states to develop regulations on the prevention, reuse and recycling of packaging waste. These regulations vary from country to country, but most countries mandate that manufacturers pay some of the costs of packaging collection and recycling in the form of producer financing, shared costs, tradable credits or packaging taxes. Many countries in Northern Europe (Austria and German) have decided to develop collection programs for packaging completely separate from solid waste. Shared systems, which split or share municipal authority with manufacturers, are typical of programs existing in Southern Europe.

Figure 1, page 46, shows packaging recycling rates in European countries as of 2009. The data show that 17 countries target the Packaging Waste Directive (2004/12/EC) to recycle at least 55 percent of packaging waste generated, and two countries missed the 2001 target to recycle at least 25 percent. The highest performing programs in recent years include Denmark (84 percent), Belgium (79 percent), Netherlands (72 percent), Germany (71 percent) and Austria (70 percent).

EPR in Canada

Canada's commitment to EPR was formalized in the Canada-Wide Action Plan, which was promulgated in 2008. EPR legislation is in existence in all of Canada's 10 provinces, with four (Ontario, Quebec, Manitoba and British Columbia) having major programs in place. These programs resulted from similar failures of voluntary take-back programs. Ontario and Quebec require manufacturers to pay 50 percent of the program costs, Manitoba 80 percent and British Columbia 100 percent. In addition, all provinces have enacted deposit systems for beer containers, with eight provinces having similar deposit laws for soft drink containers.

EPR in British Columbia has been the most comprehensive among all of Canada's provinces. In 1970, the Province enacted one of the oldest beverage container recovery systems in North America. More than 40 years later, this system has evolved into a collection, recovery and management system designed to deal with a variety of regulated products (see Table 2). These programs are managed by industry stewardship associations based on a stewardship plan submitted to and approved by the Ministry of the Environment.

Funding is either generated through advance disposal fees paid at point of retail or as part of the price of the product. The stewardship organizations track program activity, measure the results against the established objectives within their approved plan and then report those results annually to the Ministry. Every five years the producer

THE COMPETITION HAS RECENTLY ACCUSED OUR GUARDIAN SYSTEM OF BEING A CONTROL FREAK.



Being a control freak isn't bad after all, because our Guardian Control System controls any compactor, even our competitors'. That ensures you stay in control.

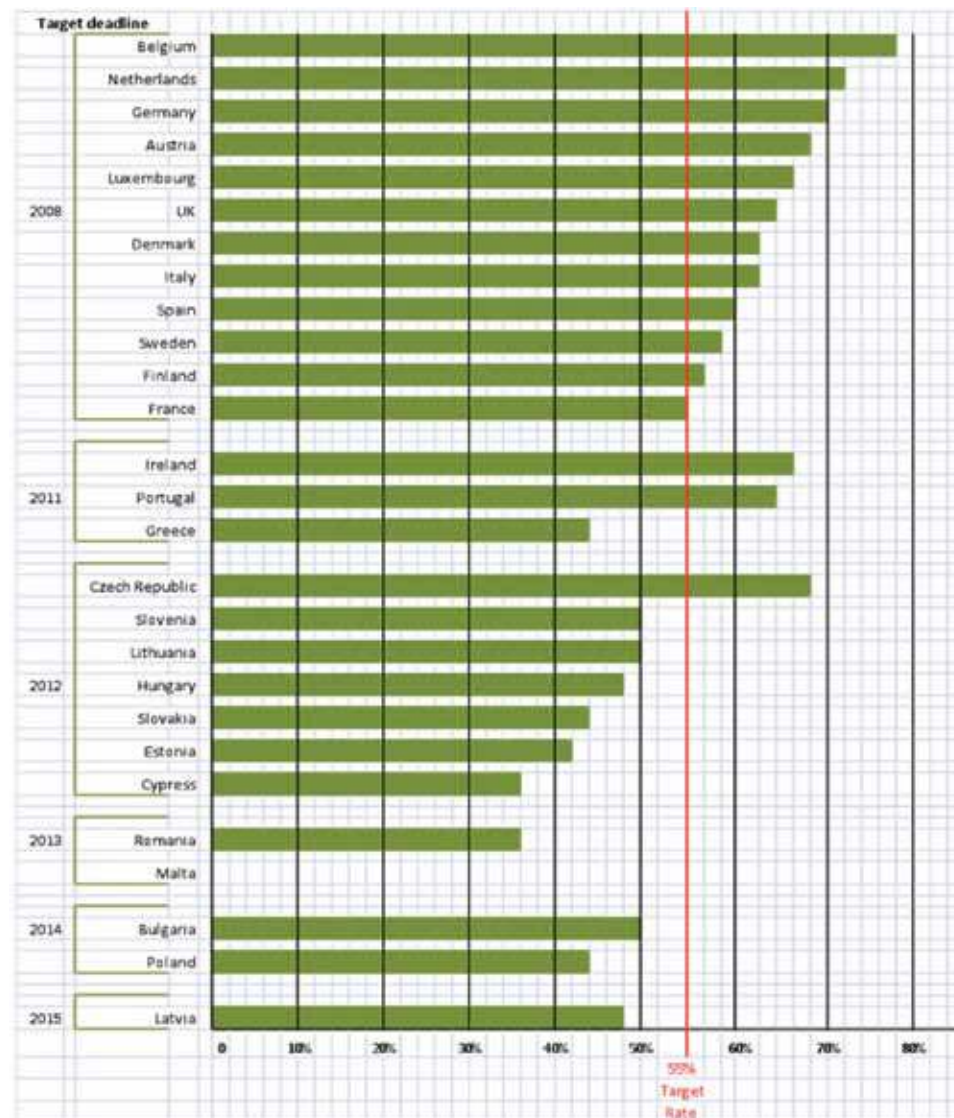
Check out these features:

- Controls and protects any brand of compactor
- Alerts you when preventative maintenance is due
- Eliminates unnecessary hauls due to false full readings
- NEMA 4 enclosure provides protection from the elements

Unleash your inner control freak and visit www.wastequip.com

SEE US AT WASTE EXPO BOOTH #2175





must
Figure 1
 Packaging recycling and target rates in European Union countries.
 Figure courtesy of Marc Rogoff, 2014.

review the approved plan and submit any amendments if applicable or advise the director in writing that the approved plan does not require changes.

Lessons Learned for the U.S.

While the EPR concept has also caught on in Europe, Canada, Latin America and Asia, until recently it has been little more than a foreign buzzword in the U.S. In a recent review of the state EPR regulations and programs, Jennifer Nash and Christopher Bosso, professors at the John F. Kennedy School of Government at Harvard University have noted the poor EPR performance across the U.S. Their review suggests that results to date in the U.S. in terms of pounds collected per capita are disappointing. For example, manufacturer-initiated collection programs for rechargeable batteries, mercury thermostats and mercury auto switches have reported low diversion rates. That is about 10 to 12 percent for rechargeable batteries, less than 25 percent for mercury auto

switches, less than 10 percent for mercury thermostats and about 15 to 20 percent for waste electronics. Further, high performance goals set out by states like Minnesota for rechargeable batteries (e.g., to recover 90 percent of designated battery types by 1995) have yet to be realized even a decade later. These results are very sobering to say the least.

Conclusions

Over the past three decades, local governments in the U.S. have invested literally hundreds of millions of dollars in developing the recycling infrastructure (e.g., curbside collection programs, drop-off stations, materials recovery facilities, etc.). This has been accomplished as a collaborative program among local governments, waste haulers, recycling markets and not-for-profit recyclers. Opponents of EPR fiercely argue that if these “links” developed, they would be broken and there would be a fundamental shift in local community control. Recycling decisions would then be made by industry who would control all aspects by producers whose sole interest is to manufacture products and not to provide recycling service. My research suggests that these predictions on the demise of local recycling with the implementation of EPR programs may be overstated somewhat. In my opinion, the real issue is to develop EPR programs that balance the needs of all the stakeholders in the overall recycling program to improve success. | **WA**

Marc J. Rogoff, Ph.D., is a Project Director with SCS Engineers (Tampa, FL). He is a National Partner on Solid Waste Rate Studies and has more than 30 years of experience in solid waste management as a public agency manager and consultant, as well as managing more than 200 consulting assignments across the U.S. on all facets of solid waste management, including waste collection studies, facility feasibility assessments, facility site selection, property acquisition, environmental permitting, operation plan development, solid waste facility benchmarking, ordinance development, solid waste plans, financial assessments, rate studies/audits, development of construction procurement documents, bid and RFP evaluation, contract negotiation and bond financings. Marc can be reached at (813) 621-0080 or via e-mail at MRogoff@scsengineers.com.

References

- EUROPEAN, Packaging and Packaging Waste Statistics in Europe: 1998-2008, The European Organization for Packaging and the Environment, 2011.
- Institute for Local Self-Reliance, “Does the Citizens Recycling Movement Face a Hostile Takeover?” July 2013.
- King County, Washington, “Position Statement on Product Stewardship,” September 18, 2013.
- MacKerron, Conrad, “Unfinished Business: The Case for Extended Producer Responsibility for Post-Consumer Packaging,” As You Sow, 2012.
- Nash, Jennifer and Christopher Bosso “Extended Producer Responsibility in the United States: Full Speed Ahead?” Journal of Industrial Ecology, 17(2): 175-185, 2013.
- Rogoff, Marc, *Solid Waste and Recycling and Processing, 2nd Edition*, Waltham, MA, Elsevier/William Andrews, 2014.
- SAIC, “Evaluation of Extended Producer Responsibility for Consumer Packaging,”