

Presentation by Kevin Dietly to the Committee to Study the Deposits and Refunds on Recycled Products

I appreciate the Committee's invitation to discuss deposit/refund systems and, more generally, recycling issues in the US and in Nevada. My name is Kevin Dietly and I am a Principal at Northbridge Environmental Management Consultants in Westford, Massachusetts. I have worked on the implementation and analysis of recycling programs in the US since 1986. With a background in economics, I have focused primarily on the economic aspects of recycling systems, but also on their efficacy and on policies and political strategies for advancing recycling programs. I have devoted a significant portion of my recycling career involved in the development, operation, and analysis of beverage container deposit programs, primarily working with beverage manufacturers, bottlers, distributors, wholesalers, and retailers. I also serve as the administrator for two beverage industry redemption cooperatives in Maine and Vermont.

1. Recycling as Resource Management

A common thread in all of the presentations today is the importance of recycling. Once seen as a nice thing to do and the province of activists and do-gooders, recycling today is an economic and environmental imperative. Recycling is a key element for resource management in this country and around the world. That is the position I take in approaching this issue and it is one that has been widely adopted by the companies with whom I work in the beverage industry.

The availability and current price levels of a wide range of resources that we consume everyday cannot be taken for granted. We therefore must explore what public policies we should adopt to ensure that we maintain access to vital commodities at a reasonable price. Since economics is the study of the allocation of scarce resources, I believe that an economic lens is one of the most important through which recycling should be examined.

While I hardly believe that we are running out of everything, it is clear that scarcity, whether due to physical or geopolitical constraints, is an increasingly important consideration in our economy and therefore in our policy-making. Will we have the - fill in the blank: energy, aluminum, rare earth minerals, fiber, lumber - that we need to maintain our economy without having to fight global wars or distort our budgets to obtain it?

It is interesting at that the local level (cities, counties, townships where most waste policy is made), recycling is usually a matter of cost avoidance – does it cost the town less to collect material for recycling or to throw it away. One can readily plot the investment in and success of recycling across this country by simply relating the cost of disposal (landfilling or incineration) with recycling rates. Trash collection and disposal costs of about \$250 per ton in New York City make recycling a real priority for their Department of Sanitation. And hard-boiled analysis of the City's costs has shown that recycling is quite close to a break-even proposition for the City – costing about as much as disposal. It goes without saying that calculus may be quite different in rural Nevada.

If one factors in an expectation of increasing demand for commodities coming from the rapidly developing economies of Asia and South America, the economic case for recycling and materials recovery comes into sharper focus. Make no mistake about it, significant capital is being

EXHIBIT I - RECYCLED PRODUCTS
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invested in this country in projects and programs to recover waste because the waste stream represents, or will soon represent, a cheaper source of commodities than the processing of raw materials.

Further reinforcing this economic incentive is concern with security and availability of supply. If we are dependent on commodities flowing from politically unstable countries or from regions that are growing so rapidly that they may consume those resources themselves, we need to consider whether we are doing enough to secure supply of essential materials.

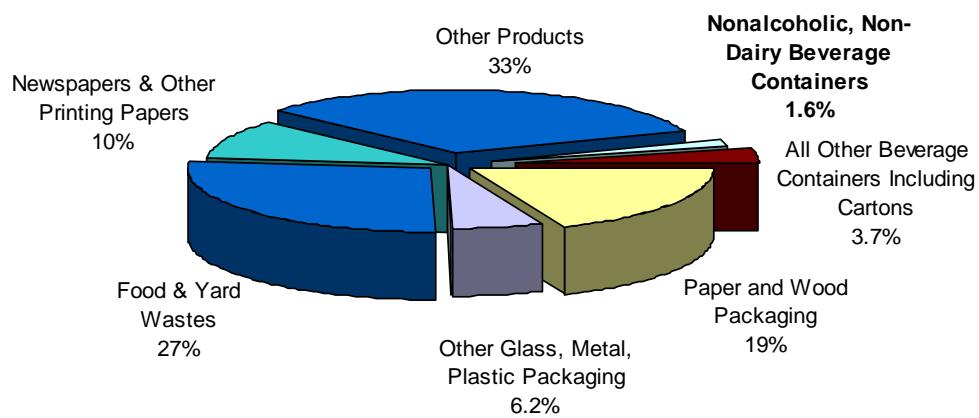
2. The US Beverage Industry – It's Place in this Issue

The beverage industry, by which I mean the producers and distributors of non-alcoholic, non-dairy beverages, holds a unique position among other consumer goods industries with regard to the issue of solid waste and recycling. The industry has been among the leading packaging innovators of the past 100 years introducing, in turn, refillable bottles, metal cans, plastic bottles, aseptic packaging, and, most recently, plant-based, recyclable plastics.¹

The industry also includes many of the most well-recognized brand names in the world, bringing high visibility to the products and packages that the industry produces.

The industry's packaging represents less than two percent of all municipal solid waste (MSW) produced in the country today. That 1.6 percent includes all the bottles, cans, cartons, and pouches that contain the industry's products (see chart). Packaging as a whole represents about

MSW Composition - 2010 EPA Data With Detail on Beverages*



* Beverage detail from American Beverage Association data compiled by Northbridge Environmental from suppliers and third party research.

¹ I do not mean biodegradable plastic bottles – I mean plastic bottles whose chemical components are synthesized from plant material, rather than petroleum. The very important difference is that a biodegradable bottle in a sea of other bottles renders the entire load unrecyclable and that poses a fundamental threat to plastics recycling in this country. Plant-based bottles, in contrast, can be recycled with other plastic bottles with no harmful effects.

30 percent of all the municipal solid waste generated in the US (as of 2010) with food and yard wastes close behind at 27 percent. Printed papers from newspaper to magazines, catalogues, and junk mail come in at 10 percent and a wide range of other products from durable goods to paper plates, wooden pallets, and tissues make up the balance.

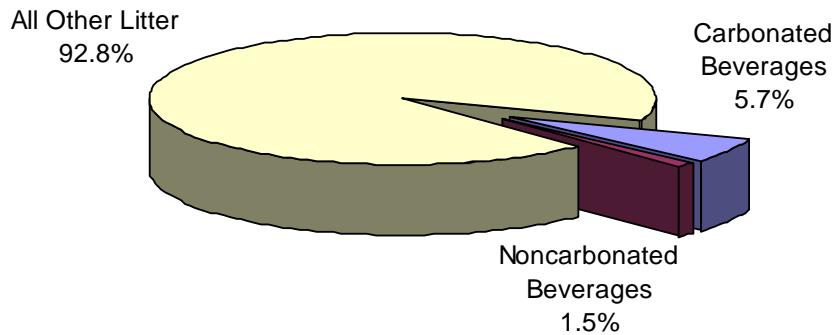
EPA reports that about 34 percent of MSW is recovered – that is, it is not thrown away or burned. (Nevada DEP reports the state's rate at 21 percent, although there are differences in how those rates are measured and computed.) Some of that recovery is recycling of metal, glass, plastic, and paper and the rest is composting of organic materials like food and yard wastes. Data we have developed for the beverage industry suggest that nearly 40 percent of their aluminum, glass, and PET plastic packages are recovered.

While discussing the environmental impact of packaging, it is important that we also discuss litter – loosely defined as waste in the wrong place. Litter is a major waste management problem because it ends up in places where it is costly to collect and unsightly to behold – beaches, parks, roadsides, *etc.*

Millions are spent each year to collect litter. And although prevention programs are clearly demonstrated to be a more cost-effective way to reduce litter, fully half of all litter that appears on roadsides each year is “unintentional,” that is, it results from material blowing out of trucks or out of trash bins that aren’t emptied. So, both prevention and cleanup programs are necessary to manage litter.

Beverage containers of all types represent an average of about 7 percent of all littered items (see chart), based on research conducted across 20 US states and Canadian provinces since 1989 using the Institute for Applied Research visible litter survey methodology. Even though the types and number of beverage containers produced have changed significantly, their share of litter has remained relatively constant for the last 20 years.

Beverage Containers in Litter



3. The Beverage Industry and Recycling Policy

The beverage industry has played an important role in the development of recycling programs around the world. The beverage industry supported the establishment of the first curbside

collection program in Ontario back in the 1980s. The industry, in conjunction with plastics suppliers, funded the infrastructure and research to develop and demonstrate the viability of plastic bottle recycling in the late 1980s. Local bottlers have spent millions of dollars on grants and programs to support community recycling programs and to participate in recycling demonstration efforts.

The industry has an initiative called the Full Circle Plan that helps explain the range of recycling and recovery issues in which the industry is involved. The elements of this program help articulate the types of programs that the industry believes are the most important and the most successful at diverting material from the waste stream. And our focus is on not just beverage containers, but all components of MSW.



3.1 Innovate

The innovation aspect of the program speaks to the continued efforts of the companies to develop packaging that meets the critical performance features of safety, utility, and compliance while also minimizing environmental impact. Use of recycled content, light-weighting, and replacing petroleum-based plastics with plant-based or renewable materials are some of the most important aspects of this effort. Within this task the industry also funds research on important issues related to recovery; in recent years this has included work on where beverage containers are consumed, access to recycling, and funding for recycling rate calculations.

It is important to note that 90 percent of the industry's consumer packages are aluminum or PET – the two most valuable commodities in the recycling stream today. The use of those materials and design elements to optimize their recycling means that the industry is strongly supporting the economic case to be made for recovery of its containers. This is a vital part of the industry's role as a producer and brand owner.

3.2 Motivate

Beverage brands are leading and/or contributing to significant efforts to motivate consumers to recycle. Both Coca-Cola and PepsiCo have launched recent initiatives to promote recycling through combinations of media campaigns, social media, rewards, and other promotional efforts.

3.3 Activate

Activating recycling programs is the most challenging and complex component of the Full Circle Plan because it involves thousands of local government jurisdictions around the country and hundreds of recycling companies who provide the vast majority of recycling infrastructure in the US. The beverage industry is doing its part to support better recycling delivery systems by researching best practices (aggregated at www.RecycleTogether.com – a screen shot of the home page is below) and demonstrating the success of those principles through on the ground programs – most recently in Knoxville, Tennessee.

The screenshot shows the homepage of Recycle Together. At the top, there's a navigation bar with links for HOME, ABOUT, GETTING STARTED, MODEL CITIES, VENUE RECYCLING, PARTNERS, and an e-newsletter sign up. The main content area features a large blue recycling bin in a grassy field. To the left, three red arrows point from left to right, each containing a numbered section: 1. Getting Started (do's and don'ts of recycling), 2. Model Cities (match your city to real world case studies), and 3. Venue Recycling (a guide for special event recycling). Above the arrows, text reads "A COMPREHENSIVE RESOURCE FOR CITY OFFICIALS ON HOW TO IMPLEMENT RECYCLING IN YOUR CITY OR TOWN." To the right of the bin, there's a "LEARN MORE" button. On the far right, there's a "Recycling News" section with several news items: "CALIF. BOARD ADOPTS REGULATION TO REDUCE GHG FROM FUELS" (April 24), "INSTITUTE EXPANDS ONE-DAY EVENT TO 'RECYCLE GLASS WEEK'" (April 24), and "GEOBIO ENERGY COMPLETES ACQUISITION OF ENVIROPLASTICS" (April 24). At the bottom, there are sections for "FEATURED MODEL CITY" (Phoenix, Arizona), "BECOME A MODEL CITY", and "FREQUENTLY ASKED QUESTIONS". Logos for various partners like the American Beverage Association, Coca-Cola, Dr Pepper Snapple Group, ICLEI, Nestle Water, and Pepsico are at the very bottom.

3.3.1 Activate – Model Cities

The model cities project in Knoxville, conducted in collaboration with The Climate Group, provided technical assistance and funding to help Knoxville makeover its entire recycling and solid waste program. Knoxville's old system effectively rewarded residents for disposing of material and penalized them financially for recycling. The new system makes disposal more expensive and less convenient, while providing large single-stream carts² to households and offering free recyclables collection. Along with new media outreach and economic incentives, the program is expected to increase waste diversion significantly in the City.

A slightly different scenario unfolded in Hartford, Connecticut, where the model cities project helped draw significant new investment in a single-stream materials recovery facility (MRF). That renovated MRF opened up the possibility for not only Hartford but 70 other neighboring communities to deploy single-stream collection and enjoy the attendant collection cost savings and increased collection rates. Buoyed by that effort, a second public sector MRF in the southern part of the state is now being converted to single stream as well.

3.3.2 Activate – Policies and Legislation

The industry also supports a range of financial incentive programs to promote recycling led by variable rate pricing for trash (also known as pay as you throw) and recycling reward programs such as RecycleBank. Individual companies also support local reward and promotion efforts – for example a multi-city effort in the Southeast sponsored by a Coca-Cola bottler and PepsiCo's Dream Machine program.

And beverage companies support a diversified platform of funding strategies to help support recycling efforts including tip fee surcharges (most recently re-instated in New Jersey after being suspended for several years) and gross receipts taxes to fund litter and recycling programs (often referred to as litter taxes). The industry is also examining the viability of producer responsibility programs for packaging, drawing on experience with similar programs throughout Europe and Canada.

The industry supports legislation to advance these principles and programs and has developed model legislation in several of these areas. So you can see that the beverage industry is actively engaged in the solid waste debate – in fact much more so than any other consumer goods producer in the US today. Our national presence and perspective on these issues blend with our local presence in every community across the country to spur our interest in this issue as a matter of environmental, economic, and social importance.

As a final example of programs supported by the industry and as a transition to discuss briefly the issue of beverage container deposits, I would like to point to Delaware's new universal recycling law enacted in 2010 as a centerpiece of Governor Markell's environmental platform. Senate Bill 234 abolished the state's failing beverage container deposit program and created a program ensuring universal access to recycling statewide beginning with single family households (as of this past September) and continuing over the next several years to include

² Single-stream collection of recyclables refers to the collection of all recyclables – paper and containers – in the same receptacle, rather than separating them into two or more streams at the curb. Single stream offers significantly increased convenience to consumers and cheaper and more efficient collection; some of the savings is offset by higher costs for downstream processing and, in some cases, higher contamination levels.

multi-family units, and then commercial establishments. All waste haulers in the state must offer their customers free single-stream recycling service with the costs embedded in trash fees. The state's waste authority is now soliciting bids for a statewide, single-stream materials recovery facility (MRF).

Improving access to and the quality of recycling programs is the common theme in these programs that the beverage industry supports, complemented by sustainable funding, incentives to encourage recycling, and effective communication and promotion.

4. Beverage Container Deposits

The beverage industry introduced voluntary deposits on bottles nearly 100 years ago as small, local bottlers distributed soda to nearby customers and charged a deposit to motivate return of the costly, refillable bottles. As the beverage industry, its products, its packaging, and consumer preferences have evolved rather significantly since then, so too has the role of beverage container deposits in public policy.

Today 10 states *mandate* deposits on selected beverage containers (down from 11 before the Delaware repeal and also reflecting the 2002 repeal of the only municipal deposit program in Columbia, Missouri). Nine of the 10 laws were passed between 1971 and 1986; Hawaii added its program in 2002.

The small share of both the solid waste and litter streams that beverage containers represent severely limits the impact that container deposit laws can have on overall waste diversion or litter. In my state of Massachusetts, for example, all of the beverages subject to deposits represent about 1.6 percent of all municipal solid waste and a proposal to expand the scope of the law to include many noncarbonated beverages would add only about 1/8 of 1 percent to the statewide recycling rate – an underwhelming figure given the nearly \$60 million per year price tag to operate the additional elements of the program.

4.1 Origin of Beverage Container Deposits

Because this Committee is charged with an examination of deposit/refund mechanisms generally, I thought it might be useful to provide a little history on the use of deposits in the beverage industry. Soft drink companies pioneered the use of voluntary deposits to recapture the valuable, refillable bottles that they used to distribute their products from the industry's early days until the 1990s when refillable soft drink packaging virtually disappeared. In fact the beverage industry still uses refillable bottles in some markets around the world where those systems work best with consumer demands and local logistics.

Refillable bottles dipped below 50 percent of the industry's US packaging for the first time in 1975 and declined thereafter. Differences in consumer shopping and consumption habits made these packages less desirable and even very aggressive pricing approaches could not compel most consumers to buy refillables. Further, evolution of the industry into regional production and distribution facilities led to significant efficiencies as well as transportation, water, and energy savings, but these developments made use of refillables less practical.

Early mandatory deposit legislation in Oregon, Vermont, Michigan, Maine, and Iowa was directed at litter as an end result, but the goal of proponents of these laws was to force beverage companies to revert to using refillable glass bottles. The logic of proponents was that if the one-way or non-refillable glass bottle did not have the 5¢ price advantage over a refillable bottle then consumers and producers would stick with refillables. In those states, the industry did stay with refillables, long after other states had moved on. Eventually, though, consumers simply would not buy those bottles and companies followed their colleagues in nondeposit states to offer one-way packaging almost exclusively.

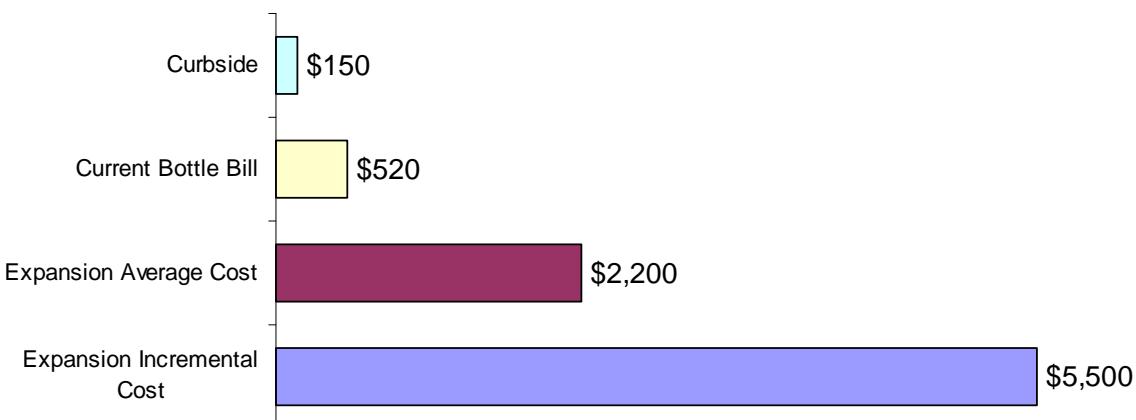
In the US, the passage of mandatory deposit laws meant not only that local distributors and retailers were responsible for recovering certain containers, but that the method they used for recovery and the economic parameters of that recovery system were largely mandated by the legislation. Unlike other laws that compel producers to be responsible for material recovery, deposit/refund programs also mandate the infrastructure and means of recovery, making these systems particularly burdensome and inefficient.

4.2 Economic Impacts of Deposits

4.2.1 High Costs

The economic impact of mandatory deposit programs is substantial. First, the programs are very expensive to establish and operate. Research indicates that deposit programs for carbonated beverages (soda and beer) typically cost three to four times more to recover a ton of recyclable material than a curbside recycling program (see chart below summarizing Northbridge research in Massachusetts, for example). Often food stores form the core of the redemption infrastructure, imposing costly, labor-intensive burdens on stores; raising prices; and driving consumers across state lines to shop. Stores must remodel to accommodate the return of containers (for larger supermarkets, this usually occurs through the installation of several reverse vending machines that automate the counting of the containers, but which still must be serviced, emptied, and cleaned by staff), stores must assign staff to manage redemptions and the mess they create, establish storage space for empty containers, and increase maintenance expenses for cleaning and pest control.

Massachusetts Cost Data



The costs of adding noncarbonated beverage containers to the redemption system are much higher – averaging \$2,200 per ton across all nonalcoholic noncarbonated beverages in Massachusetts (see chart). Since many of these containers are already recycled, however, the expansion of Massachusetts’ redemption system to capture additional containers would come at an incremental cost of about \$5,500 per ton. This is a very poor use of limited resources available for recycling and as the cost is borne primarily by grocery shoppers, is a very regressive and unfair burden to put on consumers.

Instead of looking at costs from a per-ton perspective, consider the cost *per container* to manage empties. In states like Vermont and Maine where redemption centers earn very high subsidies (3.5¢ to 4¢ per container redeemed), the cost per container to redeem, collect, and process empties can reach well over 5¢. So, consumers must ultimately bear the burden of a deposit (which is refundable) plus hidden operating costs of as much as another 5¢ per container. Income from the sale of scrap material may reduce costs somewhat, but beverage distributors, their retail customers, and the ultimate consumer must cover these costs through higher prices – they are simply too large to be absorbed.

4.2.2 Impact on Recycling Programs

The second economic impact of deposits that I will address is the adverse effect these programs have on existing recycling infrastructure. Deposits effectively remove all of the aluminum cans and a significant share of the PET plastic from existing curbside, dropoff, and scrap buyback operations. These are the two most valuable commodities in the municipal waste stream, and without them municipal recycling programs cost more to operate because the programs lose the revenue from these valuable commodities.

Given prevailing prices in 2011, the scrap value of a 12 oz aluminum can and a 20 oz PET soda bottle were both around 2¢. No other packaging has that kind of value and because the substantial majority of both aluminum and PET beverage containers are consumed at home, recycling of these materials in residential recycling programs is important for the economic viability of those recycling programs and also targets the largest share of the containers. Concern over recycling for containers outside the home is well-founded, but the first line of attack should still be strong residential programs because that’s where most of the material is.

4.3 Unintended Consequences of Deposits

4.3.1 Extra Consumer Travel

Research on both coasts and in Vermont has debunked the common notion that people just return deposit containers while they are shopping; in fact, many consumers make special trips or go out of their way to redeem empty containers. In tiny Vermont with a population of just over 600,000, consumers drive an estimated 7.6 million miles each year just to redeem containers. The time and expense represented by that figure (not to mention the fuel consumption and greenhouse gas emissions related to it) add substantially to the economic burden of deposits.

- The Vermont research by DSM Environmental estimated that consumer travel costs added another \$210 per ton to the cost of redemption – almost 40% on top of the operating costs incurred by stores and local beverage distributors.

- California research by Cascadia Consulting Group found that special trips by consumers to redeem empties would add about \$230 per ton to deposit system costs, just for fuel use – not considering the value of their time.

Clearly, none of the special interests advocating for deposit legislation is thinking much about the impacts of deposits on consumers' time or their wallets. And advocating a policy that requires people to drive to special redemption centers to recycle selected containers is not smart from an energy or greenhouse gas perspective.

4.3.2 Border Issues: Lost Sales and Fraud

Additional concerns with deposit programs include lost sales, especially in border areas where food stores lose an average of five percent of total sales to their nondeposit neighbors, and fraud.

Consumers in border areas have the opportunity to purchase beverages outside the state for significantly less and to redeem the containers back inside the state (since state-specific labeling is practically impossible and legally unconstitutional, mostly recently affirmed by a US District Court in New York). Higher prices in deposit states result not just from the imposition of the deposit, but also the need to incorporate the high operating cost of the redemption system into the prices of consumer goods.³ The combined effect of the deposit plus sales tax differences has created a retail desert on the Vermont side of the Connecticut River Valley, for example. Many jobs and significant economic development have been lost to New Hampshire businesses who sell substantially more beer and soda (and other items) than their Vermont neighbors. In aggregate, a comparison of deposit and non-deposit state border counties found that sales impacts average 4.6 percent sales losses across food stores in deposit counties, with that impact based on 5¢ deposits on beer and soda only; with higher deposits and/or more comprehensive deposit programs, the impact would be greater.⁴

Fraud is linked closely to these cross-border effects. Fraudulent activity spawned by deposits ranges from consumers redeeming containers that they purchased out of state to large, organized efforts to defraud states and beverage distributors with large movements of out of state containers into a deposit state to be redeemed. Fraud is costly to consumers and businesses:

- Fraud takes valuable commodities out of existing recycling programs (those programs lose the revenue, but still have the same operating costs)⁵
- Fraud requires the payment of refunds where no deposit was collected, triggers costs for redemption, collection, and processing plus mandated handling fees with the only offset being the scrap value

³ Note that higher store costs do not necessarily translate into only higher beverage prices. Stores have thousands of items and services over which to spread higher costs; the hidden nature of these costs makes them that much harder for consumers to avoid.

⁴ “The Economic Impact of a Container Deposit Program in Kentucky,” Center for Business and Economic Research, University of Kentucky, March 1999.

⁵ “Stealing Recycling’s Future” *Resource Recycling*, February 2012 by Robert Lange who runs New York City’s recycling programs. Lange talks about the fraud engendered by deposits and how deposit/redemption systems “often do not work successfully in urban environments.”

- Fraud reduces (or eliminates) unclaimed deposits that can be used to defer program expenses

California provided a series of headlines in 2011 related to redemption fraud. Unexplained increases in the reported return rates over the last two years have been widely attributed to fraud. Reinforcing that theory is the discovery of a vast network of satellite “redemption centers” operating in Arizona that purchase aluminum cans from the public at higher than market prices and then ship the containers into California in vast quantities to capture the refund value. The windfall from the redemption value was more than enough to cover transportation costs and take business away from legitimate scrap dealers in the state. Arizona scrap dealers have lost 60% of their aluminum can volume, which meant \$16 million dollars per year in fraud. In the last year, the scam has produced 46 arrests. Anyone who doesn’t believe that fraud is a serious problem is simply not paying attention.

A large case in New York is being prosecuted in which a number of redemption centers and materials processors were indicted in 2009 for multiple redemption of the same containers and for other illegal activities like tax evasion. The case put several establishments out of business, but fraud remains rampant in New York City and surrounding areas.

The Seinfeld episode about redemption fraud was funny, but when you consider the millions of dollars at stake, the humor fades a bit, especially if you are a scrap dealer in Arizona put out of business by the scam.

4.3.3 Bureaucracy

With the adoption of California’s AB 2020 in 1986, state government assumed a central role in the operation of a deposit/refund system for beverage containers. Before that, no other state law involved bureaucrats in the operation of the system. Under California’s program, all deposits collected, refunds paid, operating costs for redemption locations, and dozens of special payments and subsidies flow through the State’s Department of Resources Recycling and Recovery. In the most recent year reported, that Department spent \$50 million on program administration and enforcement and employed approximately 250 dedicated to the redemption program. That centralized government model also politicizes the operation of the program, with widespread and endless legislative tinkering with subsidy formulas, carving out new funding or reallocating funding to the special interests with the loudest voices and best connections.

4.4 Deposits – Why Now?

Considering the weak waste diversion and litter rationale for deposits, the high costs, and the unintended consequences, one could reasonably ask why these programs keep surfacing – even now 40 years after the first mandatory deposit law became permanent and after a virtual explosion of alternative recycling programs that has occurred since the late 1980s. Let me conclude by providing my views on that question. I see two primary drivers of deposit proposals: a search for new government revenues and the self-interest of businesses that benefit from the enactment of deposit laws.

4.4.1 Revenue from Unclaimed Deposits

Many proponents of deposit laws today point to the potential revenue from unclaimed deposits as a reason for states to adopt these programs. As originally conceived, borrowing from the design of voluntary deposit systems, mandatory deposit programs imposed the responsibility for operating and funding the container return system on local beverage distributors, leaving them with both the commodity value of the materials and the deposits that went unclaimed by consumers to offset those costs. Beginning with Massachusetts in 1989, several states (Michigan, Maine (partially), Connecticut, and New York (partially)) amended their deposit laws to seize those unclaimed deposits as abandoned property and create new state revenues. It is instructive to note that the Massachusetts law directed the funds to support recycling, but that never occurred to any significant degree and the funds now flow directly to the General Fund.

Many deposit proposals today are part of budget packages or are sold to legislators based on the potential revenue that unclaimed deposits might provide. Ironically, the only way for deposit programs to generate a lot of money for states is for the programs to fail – if consumers don't redeem their containers and instead throw them away or recycle them at home or at work, then the redemption rate will be low and the state would keep more money. If the deposit system works as intended and a high level of containers are redeemed, then there's no money for the state. In the extreme example (experienced in Maine back in the early 1990s), fraudulent redemption pushes redemption rates over 100% and the state may be compelled to pay refunds in excess of deposits collected. As a result of that situation, Maine amended its deposit law in 1995 to allow unclaimed deposits to remain with local distributors in most instances.

In short, container deposit programs are an inefficient and disingenuous way to raise money for the state, since the success of the program as a revenue generator means it has failed from an environmental standpoint.

4.4.2 Pro-Deposit Business Interests

The second motivating force behind discussion of deposit programs today is pressure from companies that benefit from the imposition of deposit programs. The most active advocates for deposits are TOMRA, a Norwegian company that produces automated redemption equipment (so-called reverse vending machines or RVMs) and the glass companies and glass scrap processors in the US. TOMRA needs deposit laws to survive; its business model depends on the deposit incentive and associated handling fees to create demand for its equipment and the associated service contracts that support it. TOMRA directly advocates for deposit laws and supports the work of the Container Research Institute, a reportedly independent research organization whose mission is to promote container deposit legislation.

The glass container and glass processing industries favor deposit programs because the programs effectively subsidize the cost of these companies' production inputs, providing the companies with less expensive raw materials and lowering their production costs. These industries have also entered the deposit debate in a significant way in recent years, hiring lobbyists in a number of states and actively campaigning for new deposit laws.

Recycled glass is a beneficial input to glass furnaces because it reduces the cost of producing new glass containers since furnaces can be run at lower temperatures, saving fuel and adding to the life expectancy of the facility. Deposit programs provide glass processors and furnaces with

glass that has been kept separate from other materials through the redemption process. This is a much less efficient way to collect and handle the glass, but the high costs of operating deposit systems are borne by consumers, retailers, and beverage distributors, not the glass companies, so these companies are simply seeking to benefit from a lower-cost source of supply through the adoption of these laws.

The glass industry has argued that contamination of glass that is collected through other methods such as curbside recycling impedes the highest value use of the glass (*i.e.*, as feedstock to make new containers). While different collection methods can be employed to keep glass separate and/or to minimize breakage, those methods may add to overall costs to communities and other recyclers. Further, while technology exists that could separate more of the recycled glass to be furnace-ready, that technology is costly and many materials recovery facilities or MRFs cannot afford it. In short, the price that the glass industry is willing to pay for recycled glass is not sufficient to pay for its collection and processing to adequate standards; a deposit system allows glass companies to avoid paying more for scrap and transfers the cost of redemption onto consumers, retailers, and local distributors.

5. Conclusion

Beverage container recycling, like recycling of other materials, is ultimately driven by the economics of collecting and processing a material for recovery versus disposing of it. It is clear that increasing scarcity and higher prices for many raw materials will lead to a greater importance being assigned to recycling. The beverage industry has led other producers in packaging design and innovation while also being in the forefront of recycling advocacy and promotion not only in the US but around the world.

The industry continues its support of recycling today with a range of programmatic and legislative strategies at the corporate and collective industry level. We believe there are proven ways to improve recycling rates for beverage containers and other materials and to do so in an efficient and equitable manner.

The industry does not support solutions like deposits that impose disproportionately high costs to address a small part of the problem, especially given the unintended consequences that deposit programs produce in terms of additional consumer travel, adverse impacts on the industry's retail customers (especially in border areas), and fraud. The research that we have conducted over the years indicates that there are better ways to improve recycling and to provide funding for recycling.

Again, I appreciate the opportunity to address the Committee and would be glad to answer any questions you might have.