Extended Producer Responsibility: Container Deposit Legislation Report

Introduction

This report focuses on container deposit legislation as one instrument of extended producer responsibility. It gives a general explanation of how extended producer responsibility works and describes, in more detail, container deposit legislation models implemented in a number of countries around the world.

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1. An Overview of Extended Producer Responsibility

1.1 What Is It?

Extended Producer Responsibility (EPR) is an emerging pollution prevention and waste management principle, the principal goal of which is sustainable development using environmentally responsible product development and product recovery. It aims to push responsibility for wasted resources back up the pipe and encourages producers to prevent pollution and reduce resource and energy use at each stage of the product life-cycle through changes in product design and process technology. It generally involves either a mandatory system that is enacted by state or national governments, or a voluntary system whereby industry takes the initiative.

The focus of this report is on beverage container deposit legislation, also known as 'bottle bills', but an explanation of EPR in general follows.

1.2 Goals

By making producers pay for the waste (wasted resources and post consumer waste) and pollution they create, they will have an incentive to incorporate a broader range of environmental considerations into both their product design and choice of materials. This reduces consumption of resources at the various stages of the life-cycle of a product or package. Cleaner production and waste prevention are the goals.

1.3 Elements of EPR Policies

There is great variation between EPR programmes but there are three key elements that all EPR policies (outside the United States) have in common:

- They extend responsibility for the product to the manufacturing stage.
- The responsibility of the producer is physical and/or financial - producers either physically take back and recycle their products or pay a third party to do so.
- Guidelines (usually set by government) require specific recycling rates, define what counts as recycling, and require data collection and reporting.

Individual producers may face barriers (eg. cost, distance) when attempting to collect and recycle a product such as packaging. In this case policies may permit producers to form collective 'producer responsibility organisations' in order to achieve their responsibilities.

EPR has already had major impacts on the waste hierarchy (five R's: reduce, reuse, recycle, recover, residual) and on product and package design - impacts that have spread well beyond the borders of the countries that have EPR policies in place. Examples of these, relating to beverage containers, are discussed in section three.

The major impetus for EPR has come in countries experiencing severe shortages of landfill capacity. But environmental benefits go well beyond reducing pressure on such disposal facilities. Well-designed EPR programmes encourage both reduced use and recycling of resources. They result in reduced energy and materials consumption, along with reduced pollution. Overall, EPR is a key instrument in achieving sustainability.

1.4 What Are the Various Types of Producer Responsibility?

Five basic types of producer responsibility are:

- **Liability** - producer is responsible for environmental damage caused by the product in question.
- **Economic responsibility** - producer covers all or part of costs for collection, recycling or final disposal of products manufactured and may charge a special fee (incurred by consumers).

- **Physical responsibility** - manufacturer is involved in physical management of the products or of the effect of the products. This can range from developing the necessary technology, to managing the total "take back" system for collecting or disposing of products he has manufactured for which a fee may be incurred.
- **Ownership** - producers assume both physical and economic responsibility.
- **Informative responsibility** - producer is responsible for providing information on the product or its effects at various stages of its life cycle.

Take-back schemes generally combine both economic and physical responsibility.

1.5 How are these responsibilities implemented?

There are three categories of policy instruments that can be initiated by government to encourage product responsibility:

- **Regulatory Instruments** include: mandatory take-back; minimum recycled content standards; secondary materials utilisation rate requirements; target rates and dates; energy-efficiency standards; restrictions and bans on disposal, materials and products.
- **Economic Instruments** include: advance disposal fees; removal of subsidies and introduction of taxes on use of virgin materials; deposit/refund systems; and environmentally preferable products procurement.
- **Informative Instruments** include: seal-of-approval types of environmental labelling; environmental information labelling (energy efficiency, CFC use, recycled content, GE content); product hazard warnings; and product durability labelling.

1.6 Why Should Producers Be Responsible For Their Products?

It is the manufacturer who develops, designs and chooses materials for products and packaging. Therefore, the most logical and effective point to minimise waste and other adverse environmental impacts of the product, is at the product development stage.

Under the current system of municipal waste management (landfilling and incineration) taxpayers foot the bill for disposal and recycling. EPR shifts the costs of managing post consumer products and packaging from the public to the private sector. Developing and designing products that minimise total environmental impact is one way of achieving sustainability. All too often, the costs of pollution, resource and energy consumption and disposal are subsidised by governments and are therefore not reflected in the price of a product. EPR corrects that imbalance by internalising these externalities, and in so doing, shifts these costs from local government and taxpayers to producers and consumers.

One example of a manufacturing business working towards cleaner production is Coca- Cola in Australia. They use a percentage of recycled content in their PET soft drink bottles (which they manufacture themselves), therefore helping to close the recycling loop.

1.7 The History of EPR Programmes

The voluntary deposit refund system for refillable glass beer and soft drink bottles, adopted by the beverage industry in the USA nearly 100 years ago, is perhaps the earliest form of the EPR system.

Container deposit laws were first enacted in North America: British Columbia in 1970 and Oregon in 1971.

In New Zealand during the 1970’s beer, soft drinks and milk were packaged in glass, refillable, returnable containers. A voluntary deposit system was common throughout the country.

EPR laws began to be implemented in Europe in the eighties.

In 1984 Sweden became the first European country to set mandatory recycling goals, of 75% for aluminium cans, to be achieved by the following year. The development and implementation of the system was left to private industry. After trying several collection schemes the aluminium industry determined that the only way they could achieve this rate was through a deposit-refund system. The aluminium can recycling rate was 63% when the voluntary system was introduced. By 1987 the recycling rate had increased to 75%, and in 1995 the rate was 92%, 30% higher than the US rate at the time. The voluntary, industry led deposit system in Sweden resulted in a nationwide aluminium recycling rate of 86% in 2000. This system ensured the programme was financed by beverage producers and consumers rather than taxpayers.

The German Packaging Ordinance (probably the most well known of EPR programmes) was introduced in 1993, holding producers responsible for managing packaging waste. Packaging consumption in Germany decreased by about one million tons between 1991 and 1995 while packaging recycling increased from 52% in 1993 to 84% in 1996.

In 1994 the European Union issued its own Packaging Directive, mandating recycling targets for packaging waste of 25 - 45%. As a result, all 15 member countries are required by law to have EPR systems for packaging. This target has recently been increased to 65%. The legislation will come into force in 2006.

Korea and Taiwan have adopted EPR policies and Japan's law requiring EPR for packaging was passed in 1995 and implemented in 1997.

In total, twenty-eight countries now have packaging take-back laws.

2. Tools Available to Enact EPR

A number of instruments are currently being employed to shift responsibility for product and packaging waste from government and taxpayers to producers and consumers. The focus of this report is on deposit-refund systems that are a part of product stewardship initiatives.

2.1 Product Stewardship Initiatives provide direction to all involved in producing, selling and using products to examine the full environmental impacts of products and packaging, communicating the need to assume more responsibility for managing their products at the end of their life. British Columbia, Canada, has the most legislated stewardship programmes (including beverage containers) of any province.

2.2 Deposit-Refund Systems

Deposit-refund systems, (also known as beverage container deposit legislation and bottle bills):

- Reduce the natural resource demands of beverage packaging;
- Encourage reuse and recycling;
- Reduce litter;
- Bring environmental benefits without requiring economic sacrifices;
- Provide a monetary incentive to the consumer to return the product or package, in this case beverage containers, and
- Create an infrastructure for collection and recycling.

Many countries and municipalities have enacted beverage container deposit laws over the years. Currently eleven states and one city in the USA[1], most Canadian provinces and many European nations have beverage container deposit laws. Deposit-refund systems also exist in these countries for other materials such as batteries and some hazardous wastes.

[1] Several US cities and counties have enacted bottle bills over the years. They were all either superceded by a state bottle bill or repealed because they did not fall under the counties' police powers. The one remaining local (rather than state) bottle bill was repealed in April 2002.

The rise in disposable (one-way, no-deposit) cans and bottles over the last few decades has resulted in an explosion of beverage container litter in countries around the world. This is a major driver towards enacting container deposit legislation.

> *"Litter is the first place people see the growing bottle and can waste problem. While kerbside recycling programmes provide a convenient service, they do nothing to address litter concerns or the growing trend toward purchasing and consuming beverages away from home." Lance King, Container Recycling Institute.*

2.3 Other Instruments Available to Enact EPR

- **Quotas**

These are requirements that products or packaging reach a particular rates of recycling, reuse or refilling, or that they contain a minimum recycled content. For example, Germany has set a requirement that 72% of most beverage containers be refillable. (The quota is only 17% for milk containers).

- **Product Bans**

The threat of product bans motivates producers to phase out undesirable materials, design for recyclability and ensure high rates of reuse or recycling. For example, in Sweden, the voluntary deposit system for aluminium cans enables the aluminium industry to achieve the government mandated recycling rate, but the driver behind the deposit system is the potential for a 'can ban' if the rates fall below the recycling rate set by government.

- **Product Charges**:

Product charges influence the choice of materials used. An eco-tax levied in Belgium increased the cost of the product and reduced consumption of PVC.

- **Advanced Disposal Fees:**

These fees, imposed at the point of purchase, are designed to influence the choice of materials used in products and can generate substantial funds (which may be used by government for environmental projects). Generally the consumer is unaware of the fee when purchasing a product, however they are sometimes refunded when the product is returned after use. Austria has implemented such a fee for refrigerators and refundable disposal fees are required on automobiles in Sweden.

3. A global overview of container deposit-refund systems (bottle bills)

3.1 General Overview

The USA, Canada, Europe, Asia and Australia have adopted deposit refund systems in various forms. There is no single model to be followed, particularly as the economy, political systems and population of a country determine how legislation may be enacted.

The voluntary deposit-refund system was created by the beverage industry as a means of guaranteeing the return of their glass bottles to be washed, refilled and resold.

Cans began replacing glass bottles in the beer industry after World War II. The convenience and disposability of cans appealed to consumers and by 1960 approximately 47% of beer sold in the USA was packaged in cans and no-return bottles. Soft drinks, however, were still sold almost exclusively in refillable glass bottles requiring a deposit. The shift from refillable soft drink 'deposit' bottles to 'no-deposit, no-return, one-way' bottles and cans came about during the sixties. This was the result of two major factors: the centralisation of the beverage industry and society moving towards becoming mobile and convenience oriented.

'Bottle bills' were first enacted in North America in Vermont (1953), where the sale of beer in non-refillable bottles was banned. The introduction of 'bottle bills' in British Columbia (1970)

and Oregon (1971) were both prompted by the increase in market share of cans and one way bottles. Oregon passed the first legislated 'bottle bill' requiring refundable deposits on all beer and soft drink containers.

By 1987, ten states in the USA, representing over one-quarter of the U.S. population, had enacted some form of beverage container deposit law. The Bottle Bill campaign has recently been revived in the USA with Hawai'i becoming the eleventh state to adopt beverage container deposit legislation. Eight Canadian provinces have implemented 'bottle bills' requiring refundable deposits on certain beverage containers. Several states and provinces have expanded their laws to cover 'new-age' beverages such as juice and sports drinks, teas and bottled water - beverages that did not exist when most bottle bills were passed.

During the 1970's there were up to 36 million returnable beer bottles manufactured each year in New Zealand but as beer started to be exported and local demand grew for premium beers, in small, pristine containers, the volume of returnable bottles dropped. What caused this to change? The major factors included centralisation of bottling plants, the high cost of running multiple filling lines and loss of bottles overseas.

In the mid eighties the New Zealand government deregulated the milk industry changing the laws about milk supply. The milk industry also started producing flavoured milk in plastic bottles which were being sold in retail outlets, including supermarkets, that did not operate return systems. Bit by bit the voluntary deposit refund system fell apart due to deregulation of industry.

3.2 USA

> *More than 114 billion aluminium, plastic and glass disposable, single-serve beverage containers are littered or wasted in the United States every year*, *and container recycling rates are plummeting*. Businesses and Environmentalists Allied for Recycling (BEAR)

State bottle bill legislation is increasingly viewed as an effective means to curb litter and waste without raising taxes. Since consumers typically pay a refundable deposit, recycling increases at little or no cost to taxpayers.

Eleven states have adopted a bottle bill although the most recent bill to be enacted (Hawai'i June 2002) will not be implemented for another two years. Litter and waste problems have prompted legislators in 15 states (along with Puerto Rico) to propose refundable deposits on a wide range of beverages.

In the 1970's the campaigning effort was led by a national organisation called Environmental Action (EA) that served as a national clearinghouse for container deposit legislation. It ceased to exist in the early nineties. Many other national organisations were actively involved in promoting state and national deposit laws.

The Container Recycling Institute (CRI), formed in 1991, is a non-profit organisation that studies and promotes policies, including container deposit legislation, that increase recycling of beverage containers and other packaging waste. They play a vital role in educating policy makers, government officials, producers and the general public regarding the social and environmental impacts of the production and disposal of no-deposit, no-return beverage containers.

The states that have implemented bottle bills are as follows, in chronological order:
1971 Oregon
1972 Vermont
1976 Maine
1976 Michigan
1978 Iowa
1978 Connecticut

1982 New York
1982 Delaware
1982 Massachusetts
1986 California

Those 10 states with container deposit legislation achieve average annual recycling rates of approximately 80 percent, which is 2 to 3 times higher than non-deposit states. They also have the highest concentration of beer refillables.

3.21 Aluminium Can Wasting in the USA

(Ref: 'Trashed Cans – The Global Environmental Impacts of Aluminium Can Wasting in America', Jennifer Gitlitz, June 2002, Container Recycling Institute. www.container-recycling.org)

Aluminium has a relatively high economic value compared to other recovered materials. However, since 1992 there has been a steady decline in recycling of aluminium cans from a peak of 65% in 1992 to 49.2% in 2001. This is despite increases in both sales of aluminium cans and kerbside collection schemes. Shifting consumption patterns (an increase in aluminium beverage can consumption away from home and the convenience of household kerbside collection schemes) is one factor contributing to the decline.

According to this report, recently published by the Container Recycling Institute, in 2001 *759,000 tons of cans (equating to 50.7 billion cans) were not recycled-.* just over half of the 100 billion cans sold that year (and 50% more than were wasted in 1990). Further illustrations of excessive wasting include these harsh facts:

- Since 1990 Americans wasted over 7 million tons of cans: enough to build over 300,000 Boeing 737 jet airplanes or reproduce the world's entire commercial airfleet 25 times. In fact, more aluminium metal than was used nationally for trucks, buses, bridges and roadway applications combined.
- Had it been recycled the metal would have had a market value of $7 billion (US) and would have saved the energy equivalent of 16 million barrels of crude oil – enough to generate electricity for 2.7 million US homes for a year.
- Greenhouse gases that contribute to global climate change are also produced during virgin aluminium manufacturing. About 3 million tons were emitted last year just to replace the 50 billion cans wasted.

The report suggests the following as possible solutions:

- Enacting a national deposit system or mandatory recycling goal in the USA. Aluminium can recycling could be increased from 49.2% to 80% nationwide.
- Beverage manufacturers could institute voluntary financial incentives.
- A frequently reinforced public education campaign be established and
- Provide consumers with convenient recycling options away from home.

3.22 The National Beverage Producer Responsibility Act of 2002

This bill was introduced into the United States Senate, by Senator Jeffords in 2002 and is one possibility to reach the solutions outlined above.

It identifies a new approach to address concerns of industry stakeholders without compromising public interest. It sets a performance standard rather than taking a traditional prescriptive approach, therefore giving industry the freedom to exercise their expertise in designing the most efficient deposit-return programme. This proposed legislation would extend the beverage company's 'supply chain' to include the management of empty containers after consumption.

The only prescriptive requirement is that the system must use an economic instrument (a 10-cent deposit) to encourage recycling. The Act complements state container deposit laws. Brand owners who currently achieve a recovery rate of at least 80%, under a current state beverage container programme, are exempt from this legislation.

Specifically the Act would:

- Establish a measurable performance standard of 80% recovery of used, empty beverage containers for recycling or reuse;
- Establish a minimum refundable deposit of 10 cents as the economic incentive for consumers to recycle;
- Require beverage brand owners, as a condition of sale of their product, to develop and submit to the EPA a Beverage Container Management Plan within 180 days of the law's implementation;
- Establish consequences for failing to submit, implement and operate the approved programme and achieve the legislated performance standard;
- Establish provisions for evaluation and monitoring of the industry's performance.

(For more information go to www.grrn.org)

Achievements of container deposit legislation include reducing beverage container litter (seven states in the USA reporting a 70 to 83% reduction), conserving natural resources through refilling and recycling therefore reducing the amount of solid waste going to landfills.

3.3 CANADA

Canadian governments have almost consistently shown a willingness to act with regards to beverage container waste. In six provinces deposit-return systems encourage EPR for all beverage containers except milk products and in two provinces for soft drink containers only. In all ten provinces, beer containers are collected via deposit return systems (and sent for refill or recycling) because of government mandate or industry self-regulation.

Public opinion shows support for deposit refund systems is high and this is important to governments grappling with beverage container waste regulations. Beverage container waste is seen as a 'readily identifiable waste' that can be addressed (through a deposit-return system) at no cost to government.

Since the late 1980s all provinces have revisited their beverage container policies resulting in most provinces strengthening or expanding their beverage container waste management regulations.

3.31 Nova Scotia

In September 2001 Nova Scotians celebrated the capture of the billionth container since the inception of the deposit-refund system in 1996. This system is run by the Resource Recovery Fund Board (RRFB), a non-profit organisation made up of representatives from government and industry. Deposits are paid on all containers and are refunded in full, for refillable containers and half, for non-refillable containers.

With 95 Envirodepots spread throughout the province (recorded in 2000) it is convenient for residents to return redeemable beverage containers for reuse or recycling and a refund. In Nova Scotia 98% of residents live within 20km of an Envirodepot. In the financial year of 2002, 235 million beverage containers were recycled, a return rate of 83%. The recovery rate for beverage containers has increased since the Envirodepots were implemented. Money raised from the deposit programmes has helped to set up a number of employment opportunities in the province, including at a tyre reprocessing facility.

In August 2001, Resource Recovery Fund Board Nova Scotia, in partnership with the Department of Environment and Labour, the Department of Tourism and Culture and Farnell Packaging, launched the Public Places Recycle Bag Pilot Project. The province's Visitor

Information Centres distributed 200,000 litter and mini-recycling bags for use in vehicles, targeted at tourists to help them recycle beverage containers while visiting Nova Scotia.

(For more information go to www.rrfb.com/pdfs/RRFB2002.pdf
Also ref. 'On the Road to Zero Waste - Part 1, Nova Scotia: Community Responsibility in Action' Video, 2000, narrated by Dr. Paul Connett. (Available from the Zero Waste New Zealand Trust office or ggvideo@northnet.org)

3.32 British Columbia

In 1970, British Columbia became the first jurisdiction in North America to establish a mandatory deposit refund system, for soft drink and beer containers, to control litter. In 1997, the province enacted the Beverage Container Stewardship Programme Regulation. This regulation required all beverage brand-owners of ready-to-drink and 'new age' beverages (with the exception of milk, milk substitutes, liquid meal replacements and infant formula) to establish a province wide collection system for returned beverage containers, under a deposit-refund system. The regulation set the goal of a minimum of 85% recovery rate and required that redeemed containers be either refilled or recycled.

Encorp Pacific (www.encorpinc.com), a federally incorporated not-for-profit stewardship agency, runs the recovery system for non-alcoholic beverage containers in British Columbia and ensures that they are recycled. In 2000 the 'Return It' programme kept almost 600 million beverage containers from ending up as litter or in British Columbia's landfills. The overall recovery rate was 81%.

(From Zero Waste, Beyond Recycling: A publication of the Regional District of Nanaimo, Spring 2002. www.rdn.bc.ca)

In the town of Smithers, Northern British Columbia, the 'garbage collection by-law' makes it illegal to put any product stewardship items, such as beverage containers, into landfill.

In 2000, consumers returned 94% of beer bottles and 95% of cans. Reasons for high return rates point mainly to the healthy partnership between the 'return to retail' system and select recycling depots. Partners such as liquor distribution branches, cold beer and wine stores and licensees provide consumers with the convenience of returning empty beer containers. Return to retail works because:

- It is convenient for the consumer to return empties when buying more beverages.
- Consumers can return empties 12 hours a day, 7 days a week at over 600 locations in British Columbia.
- It ensures a closed loop system runs most efficiently. A closed loop system allows empties to be picked up at the same time beer is dropped off ensuring trucks are never empty.

3.33 Manitoba

Other than Ontario, Manitoba is the only province without a deposit-return system for beverage containers (except beer).

The Manitoba Product Stewardship Plan (MPSP) was implemented in January 1995 and is funded by a 2 cent per beverage container Waste Reduction and Prevention (WRAP) levy. The per container levy is applied to all non-deposit, non-dairy beverage containers sold in the province and is used to fund 80% of municipal recycling costs. Almost $7 million is generated each year from this alone. The programme is administered by the Manitoba Product Stewardship Corporation (MPSC), a non-profit, multi-stakeholder organisation mandated to establish waste reduction programmes for designated materials. Beer retailing and its deposit-return system is completely separate.

Currently over 95% of Manitoba's population has access to municipal kerbside or depot programmes. Kerbside programmes collect beverage containers which are then processed.

In Manitoba beer is sold only in deposit-bearing containers and is thus exempt from the product stewardship levy. The empty containers are returned only to the point of sale (cold beer / hotel outlets) for a full deposit redemption.

(Ref. The Container Recycling Institute, www.bottlebill.info)

3.4 EUROPE

In 1994 a Directive on Packaging and Packaging Waste (94/62/EC) was adopted in the EU and was aimed at protecting the environment and ensuring the functioning of the internal market. The Directive lays down a number of requirements that all packaging must comply with.

"In general, the (European) Commission's strategy puts the emphasis on making the producer of goods more responsible - more aware of the disposal of the product and of ways to aid in either recovery of waste or prevention of waste material. This also means that consumers and public authorities need to take some responsibility for waste management."
(European Commission Newsletter, May 1998)

Packaging shall first and foremost be manufactured with a view to minimisation of weight and volume and be reuseable and/or recyclable in ways ensuring the least possible impact on the environment.

A number of countries in Europe have adopted container deposit legislation. These include Austria, Belgium, Denmark, Finland, Germany, Netherlands, Norway, Sweden and Switzerland.

(For more information go to www.europa.eu.int/eurlex/en/lit/dat/1994/en_394L0062.html)

3.41 Denmark

The Minister for the Environment has recently repealed the ban on disposable packaging that had kept canned beer and soft drinks off the market. Previously, beer and carbonated soft drinks were only marketed in refillable packaging. These were covered by a deposit and return system and packaging had to be approved by the Danish EPA. This applied to imported drinks too. The return system was extended including PET bottles of 0.5 and 1.5 litres.

The return rate for glass bottles for beer and soft drinks has been close to 99% and rates for PET bottles are almost as high. This amounts to the equivalent of 2.8 billion bottles being refilled as part of this system. Refillable 500ml PET bottles are almost 15 times cheaper than their one-way counterparts.

Denmark's packaging tax raised 101 million Euros in 1999.

Under this system disposal of 390,000 tons of waste has been avoided. This figure corresponds to around 20% of the total amount of domestic waste collected from households.

The breweries and retail trade will not start selling canned beer and soft drinks until a common deposit and return system has been established (this is due to take effect from September 2002).

2,000 new deposit machines capable of receiving all types of labelled cans and plastic bottles will be placed in shops and supermarkets throughout Denmark. A machine will also accept labelled packaging even if the shop in which it is located does not itself sell the product. By reading a bar code, the machines will determine whether a deposit is returnable on the empty packaging. Smaller outlets will not have machines installed and instead, the owners will have to receive empty cans and bottles and repay the deposit themselves if their shop sells cans or plastic bottles made of the same material.

During the first year, the new return system is aiming to secure a return rate of 90 per cent for disposable packaging. After two years, the rate is to rise to 95 per cent. These rates are much higher than in the other EU countries.

(For more information on Denmark's return system contact Fine Holten at the Danish EPA at fh@mst.dk. To see the 1999 report on Packaging for soft drinks, beer, wine and spirits and the EU Commission's view on the previous Danish regulations go to www.mem.dk/faktuelt/artikler/fak18%5Feng.htm.)

3.42 Germany

The government has proposed that from January 1st 2003, a deposit of [2]€0.25 (€0.50 for a net volume of over 1.5 litres) will be levied on drink cans, one-way glass bottles, drink cartons and one-way plastic bottles (PET). This proposal is currently being challenged in Germany's High Court. (Ref. Reuters 11th September 2002)

Of the 33.7 billion litres of beverages consumed between May 2000 and April 2001 1.8 million tonnes of this was one-way containers.

The aim of the deposit system is to strengthen the reuseables system, giving bottling companies, retailers and the consumer incentives to start using reuseable containers. The Federal Government also see it as an important step towards turning people away from their 'throwaway' mentality.

Under the current Packaging Ordinance, one-way containers must be subject to a compulsory deposit if the nationwide market share of the reuseable drinks containers repeatedly falls below 72%.

Producers and retailers are obliged to take back beverage container packaging. Every point of sale must provide a return facility – either manual or machine.
Investments for setting up the deposit return machines amount to €1 billion. Around 80,000 deposit return machines will be required. However, additional costs to the consumers will equate to less than an extra cent per packaging.

(For more information go to www.bmu.de/english/topics/waste/waste_thinking.php)

The Packaging Ordinance increased refilling and encouraged medium sized beverage companies to invest in refilling systems.

Of 161,000 jobs directly connected to the manufacture and filling of beverage containers and to the distribution and selling of packaged beverages in Germany, 73% involve refillable containers. One study estimated that 53,000 jobs would be lost if one-way containers overtook refillables. Yet if a transition occurred in the opposite direction 27,000 new jobs would be created.

3.43 Sweden

The law requires that aluminium cans are to be recycled at a rate of 90% or face a ban. They are the only beverages packaging to be covered under the deposit system in Sweden at present.

3.44 UK

The Independent, a UK newspaper, reported on August 12th 2002, that "returnable soft drinks bottles could be about to make a comeback". The UK government is now considering providing incentives for manufacturers who set up deposit bottle schemes.

[2] Euros

3.5 ISRAEL

A billion plastic soft drink bottles are discarded every year in Israel (which accounts for more than 10% of all waste by volume.) The Israel Union for Environmental Defense (IUED) drafted a bottle deposit law, which came into force on October 1st 2001, stating that "bottlers and importers of all non-dairy beverages, working through Israel's major retailers, must charge a 25-agarot deposit on beverage containers under 1.5 litres and refund the deposit when they are returned". The bill sets recycling targets of 50% of all drink bottles sold by the end of 2001, increasing to 80% by 2004.

(For more details go to www.iued.org.il/inerAct.asp?A=LE&ID=90&P=p5.)

3.6 ASIA

Japan, Korea and Taiwan have introduced EPR programmes for containers and packaging, amongst other items.

3.61 Japan

The Japanese government has introduced a modified form of EPR legislation that promotes shared (physical and financial) responsibility amongst manufacturers, importers, retailers and consumers. 60% of household waste is made up of container and packaging waste. In response to the 'Law for the Promotion of Sorted Collection and Recycling of Containers and Packaging' (which took effect in 1997) kerbside collection of glass bottles, PET bottles, steel cans, aluminium cans and paper packaging for recycling has increased by 27% (from 1.25 million tons in 1997 to 1.59 million tons in 2000).

The legislation was modelled on the French deposit return system and was designed to limit disruptions of existing systems for separation and collection of recyclable materials. It was intended to shift the negative costs for materials, collected in community recycling programmes, from the communities to product manufacturers.

Refillable milk and beer bottles are exempt as industry reported that these containers are reused more than ten times on average as a result of existing programmes. Three beer manufacturers that reuse bottles have implemented their own voluntary deposit-return system. Deposits are reimbursed when bottles or crates are returned by the consumer.

Environmental activists have been concerned that overall manufacturers bear little of the financial burden for recycling, leaving municipal governments to cover costs.

3.62 Korea

The deposit-refund system became effective in 1992. The onus is on producers and importers to pay deposits into a 'Special Account for Environmental Improvement'. They are paid refunds from the 'Account' based on the recovery levels achieved for their products. The government plans to increase the deposit as the original amount did not cover costs of collection and treatment of waste.

3.63 Taiwan

The deposit-refund system was one instrument that helped the country reach an 80% recycling rate for PET bottles within three years of its initiation (1989). Manufacturers and importers paid into a fund (according to their sales) and consumers were given a refund for returning PET bottles.

Two labelling systems exist for all packaging; one mandatory, one voluntary. Supermarkets and chain stores are required to establish collection points for waste containers that bear the official recycling logo. The mandatory system requires all containers covered by the Waste Disposal Act to carry an official recycling symbol. The voluntary programme (Green Mark) allows manufacturers the right to use the logo on their products if they are deemed

"environmentally friendly". This includes the encouragement of waste minimisation through product redesign.

(Ref. 'Facts to Act On', Institute for Local Self Reliance, January 25, 2002, www.ilsr.org)

3.64 India

In India the deposit refund system covers glass 1 litre Coca-Cola and Pepsi bottles only. 43 rupees are levied at the point of purchase and 23 rupees are refunded when the empty bottle is returned.

3.7 LATIN AMERICA

Refilling systems thrived in most Latin American nations until 1990, the year when a deluge of one-way PET soft drinks bottles and beer cans appeared in some South American markets. However, Coca Cola and other companies continue to sell a significant volume of soft drinks in refillable bottles in order to make packaged beverages affordable to more people in Latin America.

3.8 AUSTRALIA

3.81 In 1975 **South Australia** became the first and only state in Australia to introduce container deposit legislation.

Under a voluntary return system (introduced in 1912), consumers are charged a refundable deposit (currently 10 or 20 cents) in addition to the normal retail price. Historically, this deposit was always redeemable at retail outlets but with the advent of 'single trip' containers the result has been that most deposits are redeemed at recycling collection depots.

Under the Beverage Container Act (1977), an additional 5 cent deposit is imposed on certain aluminium, glass and plastic beverage containers, which is also redeemable at collection depots. This system operates separately from the voluntary return system for soft drinks mentioned above. When the beverage filler or manufacturer supplies the beverage to the retailer, the 5 cent deposit (plus handling fees) are included in the wholesale price. The filler withholds this money until a 'super collector' (agent for the beverage fillers) makes a claim according to the sales figures for the product. The retailer then sells the beverage to the consumer with the deposit and handling fees included in the retail price. When the empty container is returned to recycling depots or alternative collectors the deposit is refunded.

The return rate for beverage containers ranges from 80-90%. The value of the unredeemed deposits offsets the cost of funding the CDL system. Benefits of the system include reduced litter, reduced Council costs and the direct employment of 600 people.

It is reported that kerbside systems and CDL compliment each other in South Australia.

The system is to expand in January 2003 and will include all beverage containers up to 3 litres (including tetrapaks).

(For more information go to www.recyclesa.com.au, www.wastecom.sa.gov.au/wmc/FactSheets/cdl.html and www.epa.gov.au)

3.82 New South Wales

On World Environment Day (June 5th) of this year the Local Government and Shires Association ran a successful 'deposit refund stall', in a small town in New South Wales, inviting people to experience returning their empty bottles and cans for a 20 cents refund. (A survey conducted on the day found that 98% of respondents supported a recommendation to the New South Wales government that a 10 cent refundable deposit be applied to all beverage containers.)

A report was released in February 2002 with recommendations to introduce legislation that establishes a container deposit return system. An alternative proposal was to strengthen industry recycling targets to levels that achieve equivalent outcomes to those expected from the introduction of CDL (recovery rates of 90%)

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(For more information go to www.lgov.org.au and go to Policy, Environment and CDL
Also go to www.recyclesa.com.au and www.wastecom.sa.gov.au/wmc/Fact Sheets/cdl.html)

3.9 NEW ZEALAND

Currently, New Zealand has no form of Extended Producer Responsibility legislation. The Ministry for the Environment is investigating various economic instruments which could "fund waste minimisation and change wasting behaviour" as part of the waste strategy, 'Towards zero waste and a sustainable New Zealand' (March 2002). However, container deposit legislation features low down on the Ministry's list and is unlikely to be prioritised unless public pressure increases. Despite New Zealand being a small country with a dispersed population, opportunities exist for container deposit legislation to be implemented.

(For more information go to www.mfe.govt.nz.)

In the 1970's there were 36 million returnable beer bottles manufactured each year in New Zealand. Now, 8% of the packaged beer market is covered by the Associated Bottle Company (ABC), who operate the 'swap-a-crate' system for 745ml beer bottles. Breweries lease bottles from the ABC who wash them for reuse. No other bottles are covered due to the multitude of bottle shapes in the industry.

Mainland products provides milk in reused bottles, for home delivery and dairies in the South Island, but no longer in the North Island.

A handful of local breweries around New Zealand operate a voluntary return system, for bottles, including Beerworks in Wanaka. Southern Grain Spirits NZ Ltd is experimenting with the washing and re-use of small beer bottles (stubbies). Several companies buy and wash wine bottles (eg.Southern Grain Spirits do so for Canterbury House and Pegasus Bay wineries).

A number of small ventures around New Zealand supply their products in reused bottles. These include a Nelson-based sauce manufacturer who buys 350ml Jim Beam bottles. The Recycled Materials Foundation, Christchurch, accepts Barkers 'fruit cordial' bottles for reuse by Barkers (South Canterbury company).

Living Nature, a natural skincare company based in Kerikeri, operates a voluntary deposit refund system offering a 20 cent refund per container returned. Glass bottles are washed and reused and the plastic bottles are washed and passed on to the local recycling operation in Kerikeri.

4. Summary

There are many opponents of container deposit legislation, even within the resource recovery industry. Kerbside recycling operators have been known to oppose CDL because revenue from valuable materials, such as aluminium, is perceived to be diverted. However, this is a negative approach towards the potential of resource recovery and it has been documented, in several countries, that both deposit-refund and kerbside collection systems can co-exist, apparently to the benefit of all. British Columbia has demonstrated that deposit-refund and focused kerbside systems achieve diversion rates of 60-80% on most beverage containers. Such results indicate that an integrated waste management approach has helped the province progress.

Costs to taxpayers can also be kept to a minimum, as has been proven in Manitoba where 80% of the municipal recycling programme is funded by container deposits.

Sound Resource Management carried out a study on the Massachusetts' Bottle Bill (USA), comparing kerbside collection versus deposit systems. They concluded that given the twin goals of maximising diversion while minimising costs, deposits came out on top.

(For more information go to www.zerowaste.com)

The list of pros of container deposit legislation is extensive and includes the following:

- Decreased beverage containers in the waste stream;
- Energy & resource conservation;
- Decreased littering;
- A saving in landfill space;
- Attracted investment;
- Employment creation;
- Provision of a steady source of clean, contaminant free materials;
- Community groups are able to raise money from collections;
- Cost savings to local governments and
- Public support.

Ultimately, the ideal path for containers recovered under deposit-refund systems is collection, reuse and then recycling. Refilling is an attractive option, particularly in the case of beer manufacturers or in countries where unstable material markets mean infrastructure for recycling is weak. For example, Finland embraced refilling because its capacity for recycling glass is limited and markets for recovered glass are unstable. It does not have the infrastructure to recycle materials (such as glass, PET and aluminium), has a low population density and low levels of packaging waste. As a consequence, Finland prefers to promote refilling rather than investing in extensive collection programmes.

Eco-taxes on one-way containers may be the best policies for preserving or promoting refilling. They provide an economic incentive to package, sell and purchase beverages in refillable containers.

Consumers embrace the concept of refilling. The Institute for Local Self Reliance (USA) report that survey results in places that have refilling laws indicate that a large majority of consumers support these laws or prefer refillable containers (for beverages). Surveys were conducted in Finland, Germany and the Canadian province of Prince Edward Island.

Bottle deposits and refilling were once an integral part of every day life for consumers in many countries around the world and are topics that are reminisced about even to this day. There is no reason why New Zealand cannot return to a system that has so obviously been a success in so many countries around the world.

5. Resources

The Container Recycling Institute - www.container-recycling.org & www.bottlebill.info - Container and Packaging Update published quarterly and 'Trashed Cans- The Global Environmental Impacts of Aluminium Can Wasting in America', Jennifer Gitlitz, June 2002.

Grass Roots Recycling Network - www.grrn.org - National Beverage Deposits – A Summary of National Beverage Producer Responsibility Act of 2002.

The Institute for Local Self Reliance - www.ilsr.org - Facts to Act On: EPR Tools, October 2000; Asian Countries jump on the EPR bandwagon, January 2002; Local Initiatives Leverage EPR, November 2000; Reduce, Reuse, Refill!.

Hawaii's Bottle Bill – www.opala.org/BottleBill/Container_Legislation.htm

The Zero Waste Alliance - www.zerowaste.org

Institute for Sustainable Futures and University of Technology , Sydney, Independent Review of Container Deposit Legislation in New South Wales - www.isf.uts.edu.au/CDL_Report/execsummary.html

British Columbia Government website – http://wlapwww.gov.bc.ca/epd/epdpa/ips/review.html

Zero Waste North, Canada – www.zerowastenorth.com

Understanding Beverage Container Recovery, R.W.Beck for the Multi Stakeholder Recovery Project; an initiative launched to evaluate options for moving towards the Business and Environmentalists Allied for Recycling's (BEAR) 80% beverage container recycling goal.

State Environmental Resource Centre - http://serc.com/bottlebill/fact.html

Europe - www.europa.eu.int/eurlex/en/lit/dat/1994/en_394L0062.html

Zero Waste, Beyond Recycling – **Regional District of Nanaimo**, Canada, publication, Volume 1, No. 1, Spring 2002 – www.rdn.bc.ca

Champions for the Environment – Annual Report for the **Resource Recovery Fund Board**, Nova Scotia, 2002. www.rrfb.com/pdfs/RRFB2002.pdf
Industry Producer Stewardship and Beverage Container Waste Management programmes in Canada, 2002, Michael Jessen. Available on **Zero Waste New Zealand Trust** website - www.zerowaste.co.nz

Extended Producer Responsibility in Cleaner Production, **Thomas Lindhqvist** – www.lu.se/IIIEE/information/library/publications/dissertations/2000/2.pdf

Israel Union for Environmental Defense – www.iued.org.il

Recycling Council of British Columbia – www.rcbc.bc.ca

Video – 'On the road to zero waste- Part 1, Nova Scotia: community responsibility in action', 2000, narrated by Dr. Paul Connett (available from the Zero Waste New Zealand Trust office).

The economic and environmental benefits of beverage container recycling: The Case for updating Massachusetts' bottle bill, Dr. Jeffrey Morris, **Sound Resource Management** - www.zerowaste.com

Other recent reports from Zero Waste New Zealand Trust:

'Wasted Opportunity: A Closer Look at Landfilling & Incineration', September 2002. Available for $5.

Plastic Shopping Bag report – a detailed report about the reduction in use of plastic shopping bags around the world, investigating alternatives such as biodegradable packaging. July 2002.

Putrescibles report summary – a thorough overview of organic waste collection and processing operations in New Zealand and overseas. June 2002

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