

Assuming Responsibility for Packaging and Packaging Waste

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ABSTRACT

In the last four decades, consumer convenience - emphasising throw-away packaging and disposable products - has become as much a tool of marketing as quality and price. The quantity of packaging in the waste stream, its visibility and the overall reduction in capacity to effectively manage such wastes has resulted in the development of policies for packaging stewardship or extended producer responsibility (EPR) in many countries. This paper reviews the set-up, operations and results of two early entrants on the stewardship scene: The Duales System Deutschland in Germany and the Manitoba Product Stewardship Program in Canada. The variable stewardship that has resulted, due to differing obligations on producers and consumers, is highlighted and policy direction suggested.

INTRODUCTION

A small child is given a tiny bag of potato chips, she grabs at the puffy little plastic foil bag, tussles with it and finally resorts to tearing it open with her teeth. Air escapes, the package flattens and she is left with 8 or ten chips and salty crumbs. Even such a small child quickly consumes the snack; she licks her fingers and wonders what to do with the package.

Whose responsibility is the package? The little girl's? Her parents'? The municipality that operates the landfill where it will almost surely be taken? What about the company that designed the product and chose a package that maximised its marketing appeal and in turn its profitability? Should it not bear some responsibility for the cost of disposal? What about the company's choice to market such a small amount of food in what is probably more an advertising wrapper than a container?

In the last four decades, consumer convenience - emphasising throw-away packaging and disposable products - has become as much a tool of marketing as quality and price (Fenton, 1993). The quantity of packaging in the waste stream, its visibility and the overall reduction in capacity to effectively manage such wastes has resulted in action directed at reducing the impact of packaging and packaging waste on resources and the environment. Over the past seven years such action has included the

development of programs and policies for packaging stewardship, product stewardship or extended producer responsibility (EPR) in many countries.

While there are a variety of definitions of packaging stewardship, product stewardship and EPR, all include the establishment of responsibility. As an element of the Canadian National Packaging Protocol, the National Task Force on Packaging (NTFP) indicates that packaging stewardship is the "principle by which industries assume responsibility for the environmental impacts caused by the packaging that they introduce to the marketplace..." (NTFP,1994). Ryan (1993) notes that the "manufacturer should be responsible... meaning that industries, not municipal governments, must be the ones to keep it [waste] out of dumps and incinerators". Under the Canadian Industries Packaging Stewardship Initiative proposed in Ontario, the draft regulations called for "all who are responsible for introducing packaging to the market place" to "take action to divert packaging from disposal through reuse and recycling" (Ministry of Environment and Energy, 1994).

As Sinclair and Fenton (1997) indicate, packaging stewardship initiatives specifically permit industry to assume responsibility for ensuring: that the packaging they introduce to the market place has a minimal impact on the environment; that their packaging recognizes the hierarchy of source reduction, reuse and recycling, in support of general resource conservation; that their packaging recognizes and incorporates full-cost pricing. Full-cost pricing will internalise waste management costs and correctly signal consumers and producers of packaged goods on the position of a particular package in the waste management hierarchy and on the level of impact the package has on the environment.

One of the main problems of introducing packaging stewardship is the traditional division of responsibility among actors for product design and quality, for environmental protection and for waste management (Fenton, 1993). Fragmentation of responsibility allows the producer to lobby hard against the introduction of regulations that force responsibility back onto their accounts. Governments are reluctant to introduce command and control style regulation because the lobby from the producers is more direct and sustained than the pressure from citizens for environmental protection. The result is often a negotiated form of "responsibility" or responsibility limited by arbitrary measures of cost and effectiveness as opposed to environmental benefit.

Product/packaging stewardship and EPR programs envision a rearrangement of responsibilities. Industry would have broader environmental responsibility than traditionally - becoming stewards of the environment for the products

that they produce. Municipalities would have reduced responsibilities - becoming contributing partners to the stewardship program. Senior government would provide rules and background legislation to ensure that the other players accept an obligation for product stewardship (Sinclair and Fenton, 1997).

Despite the fact that "packaging is the largest single contributor to one of our nation's most troubling environmental problems, the municipal solid waste crises" (Stillwell, et al., 1991), little progress has been made toward the implementation of packaging stewardship programs in North America. The purpose of this paper is to review the set-up, operations and results of two such programs: The Duales System Deutschland in Germany and the Manitoba Product Stewardship Program in Canada. The Duales System Deutschland program was the first packaging stewardship program in the European Community and the Manitoba Product Stewardship Program was first in North America. As such these programs, and their development, present interesting case studies that help to inform the current policy debates about packaging stewardship.

DUALES SYSTEM DEUTSCHLAND (DSD)

Germany was the first country to introduce packaging stewardship legislation. In fact, legislative action in Germany predates the EU Packaging and Packaging Waste Directive. The OECD notes that Germany has the most extensive packaging legislation in the world (OECD, 1997). Germany had attempted to encourage packaging reduction and recycling through voluntary measures in the late 1980's. When industry failed to respond, mandatory measures were introduced with the passage of the Packaging Ordinance.

The Packaging Ordinance has been in force since June 12, 1991. The legal authority for the Ordinance was established under the German Waste Act that is the primary instrument for the regulation of waste in Germany. The favoured policy approach of the German government has been termed 'product stewardship'. As Michaelis (1995) notes, "the basic philosophy of this approach is to close the products life-cycle by making the producers responsible for their products from cradle to grave". This leaves the producers themselves in charge of the recycling components of the program.

The goals of the legislation are outlined in Article 1 of the Ordinance:

1. Packaging shall be manufactured from materials which are environmentally compatible and do not hamper the reuse or recycling of the materials used

1. Waste from packaging shall be avoided by ensuring that packaging
 - is restricted in volume and weight to the dimensions actually required to protect the contents and to market the product;
 - is designed in such a way that it may be refillable provided this is a technically possible and feasible; and,
 - is reused or recycled if the conditions for refill are not available (Government of Germany, 1991).

Packaging within the meaning of the Ordinance includes all transport packaging, sales packaging and secondary packaging. Transport packagings include all materials that serve to protect materials during transport or are used for reasons of transport safety. Sales packaging includes any material used by the consumer to transport the goods or keep them until such time that they are used. Secondary packaging includes any material that is used to allow a good to be sold on a self-service basis, make theft more difficult or to serve advertising purposes.

The Packaging Ordinance was implemented in all 16 states across the country in three stages:

1. Effective December 1, 1991 - all transport packaging to be taken back to manufacturers and distributors, including barrels, canisters, sacks, pallets, etc.
2. Effective April 1, 1992 - all secondary packaging must be taken back to the distributors at point of sale including blister packs, advertising, decoration, etc.
3. Effective January 1, 1993 - all sales packaging must be returned to the distributor including bottles, cans, cups, bags, cartons, trays, etc.

Take-back and Waste Prevention Obligations

The Ordinance requires that all transport packaging be taken back by fillers who have to re-use it or return it to manufactures for recycling. Secondary and primary packaging must be taken back by stores at or near the point of sale and must be returned to manufactures for recycling. In addition, deposit/refund systems for all primary beverage, detergent and paint containers are required. For primary packaging not requiring deposit/refund the Ordinance allows for the development of a system to allow the take-back of such packaging through private collection and reprocessing.

The Ordinance sets targets for take-back, sorting and recycling that must be complied with. The targets to be met by July 1998 were as follows:

- A minimum of 80% of all packaging material must be "collected"
- A range of 80-90% of this packaging material must be "sorted"
- A range of 60-70% of this packaging material must be "recycled"

Waste prevention obligations are also an essential element of the German program. The Ordinance calls for goods to be made from materials that are environmentally compatible and that do not prevent the reuse or recycling of the materials used. Article 1 of the Ordinance, as noted above, also directs volume and weight restrictions. While no targets have been set for waste prevention this has been effectively achieved through the levy-charge financing system, discussed below.

Transfer of take-back obligations

The transfer of take-back obligations allows for a collective means to be established for meeting obligations. Realizing, and no doubt lobbying for, such an opportunity the companies from the packaging, consumers' goods industry and retail trade founded Duales System Deutschland (DSD) GmbH in 1990. The purpose of establishing the company was to set-up a private system for the collection sorting and recycling of used packaging from households and small businesses as allowed for under the Ordinance.

95 companies established the original non-profit company. As time has passed and the system matured the number of shareholders in DSD has risen to around 600. Given this dramatic increase the company was no longer in line with the principles of a GmbH, or private limited company, and became an AG, or public limited company, in the beginning of 1997.

A Board of Directors runs the company with representatives from the packaging industry, consumers goods industry and retail trade industry. A broader based Advisory Committee oversees their work with representatives from politics, industry, trade, research and science, consumer organisations, etc. A staff of 350 employees carries out the work of the Board and Advisory committee.

The main tasks of DSD are to ensure that the targets for collection, sorting and recycling are met. To do this they ensure that companies putting packages into the market place are part of the DSD program, they enter into contracts with private companies for the collection and sorting of materials, and they insure there are a series of 'guarantor' industries who are responsible for taking the sorted material for recycling.

Financing

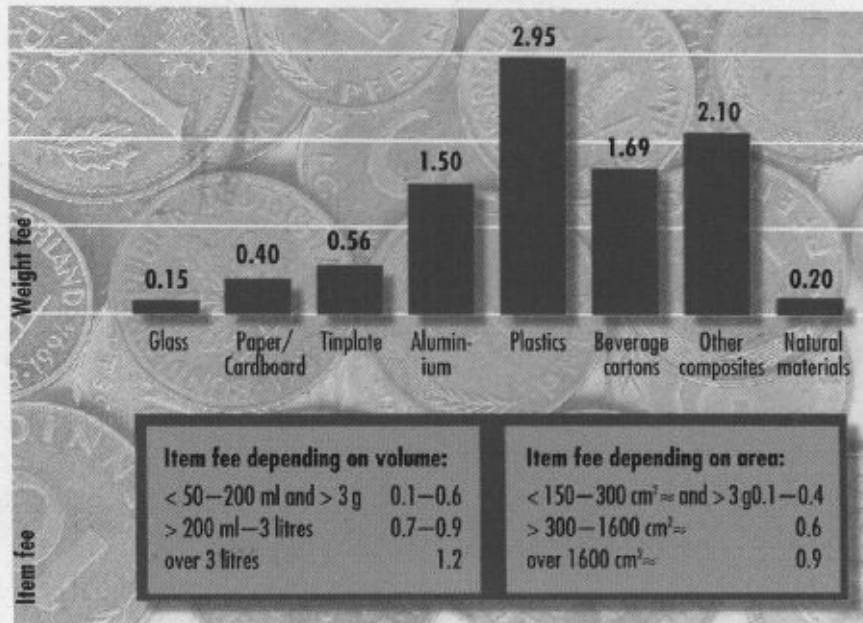
DSD finances their activities through charging for trade mark licensing to fillers, packers and importers of packages. "Der Grüne Punkt" (the Green Dot) license is sold to such companies based on the type of package and its recyclables. Once the fee is paid the manufacturer must attach the Green Dot mark to their package to signal to consumers and recyclers that they participate in the program and have paid a levy fee. In all, DSD currently has about 17,000 companies as customers, all of which may have a number of licenses depending on the variety of packages they use.

The fee structure under DSD was set up with the notion of the "polluter pays" principle in mind, ensuring that the actual waste management costs are charged for the individual material fractions. In this way DSD is able to ensure that materials with a high licensing rate and/or low waste management costs are not used to subsidize materials with a low licensing rate and/or high waste management costs.

The levy fee structure in Germany presently is based on the weight, volume and area of a package, making the fee program the most complicated and the most expensive in operation. Weight related fees apply to all sales packaging as does the item related fee, which is calculated using the volume or the area of a package. German industries are required to bear the additional costs of the recycling or disposal of the materials collected (Schmitz, 1997). Table 1 outlines the current fee structures and Table 2 provides calculation examples for levy fees.

LICENCE FEES FOR THE GREEN DOT

Weight fee in DM
per kilogramme
plus statutory VAT



Item fee in Pf per item
depending on volume or
area plus statutory VAT

Item fee depending on volume:

< 50—200 ml and > 3 g	0.1—0.6
> 200 ml—3 litres	0.7—0.9
over 3 litres	1.2

Item fee depending on area:

< 150—300 cm ² and > 3 g	0.1—0.4
> 300—1600 cm ²	0.6
over 1600 cm ²	0.9

Source: Duales System

Table 1

CALCULATION EXAMPLES FOR LICENCE FEES

Calculation example
plastic tubs:
Comparison of
different tub sizes

150 g volume; 7.6 g plastic fraction,
1.0 g paper fraction, 0.36 g alu fraction



Fee:	Material = 2.34 Pf	Material = 11.24 Pf
	Item = 0.60 Pf	Item = 0.90 Pf
	Total = 2.94 Pf	Total = 12.14 Pf

1,000 ml volume; 38.1 g plastic fraction



Calculation example
tin cans:
Comparison of
different tin cans

380 ml volume; 47.09 g tinplate fraction



Fee:	Material = 2.64 Pf	Material = 5.68 Pf
	Item = 0.70 Pf	Item = 0.90 Pf
	Total = 3.34 Pf	Total = 6.58 Pf

850 ml volume; 99.2 g tinplate fraction,
3.1 g paper fraction



Source: Duales System

Table 2

Collection and Recycling

DSD has entered into contracts with some 530 private and municipal waste management companies to provide collection services to homes, small businesses and schools. There is no uniform system for collection throughout the country, but the two main variants are: a curbside collection system and a bring system. In the curbside system, lightweight packages are collected in yellow bags or yellow bins from individual households. In these systems the paper fraction is also usually collected at the curb in a blue bag or blue bin. In the bring system consumers take the packaging they have collected to local recycling stations. Glass - sorted into green, brown and clear fractions, paper and cardboard are mostly collected in this way. Much of the glass and plastic fraction is dealt with through the deposit return system established under the Ordinance.

After the materials have been collected they are sorted and bailed in preparation for distribution to recycling guarantors. As DSD outlines, "great importance is attached to the so-called guarantors at the interface between

sorting and recycling. This is because they have contractually guaranteed to accept and recycle the material forwarded to them". There are currently 15 guarantors operating throughout the nation.

Program Results

In 1997, the per capita collection amounted to 73.7 kilograms, up from 71.2 kilograms in 1996. In all, 5.6 million tonnes of packaging recyclables were collected. This was equivalent to 89% of the sales packaging available from households and small businesses (DSD, 1998). Achieving these impressive numbers meant that DSD exceeded the recycling targets for all fractions as shown on Table 3. As a result the quantity of material sent for recycling rose to 5.45 million tonnes according to the following breakdown: Glass 2.74 million tonnes; paper and cardboard 1.37 million tonnes; plastic 567 thousand tonnes, composites 420 thousand ton, tinfoil 312 thousand ton and aluminum 40 thousand tonnes (DSD, 1998).

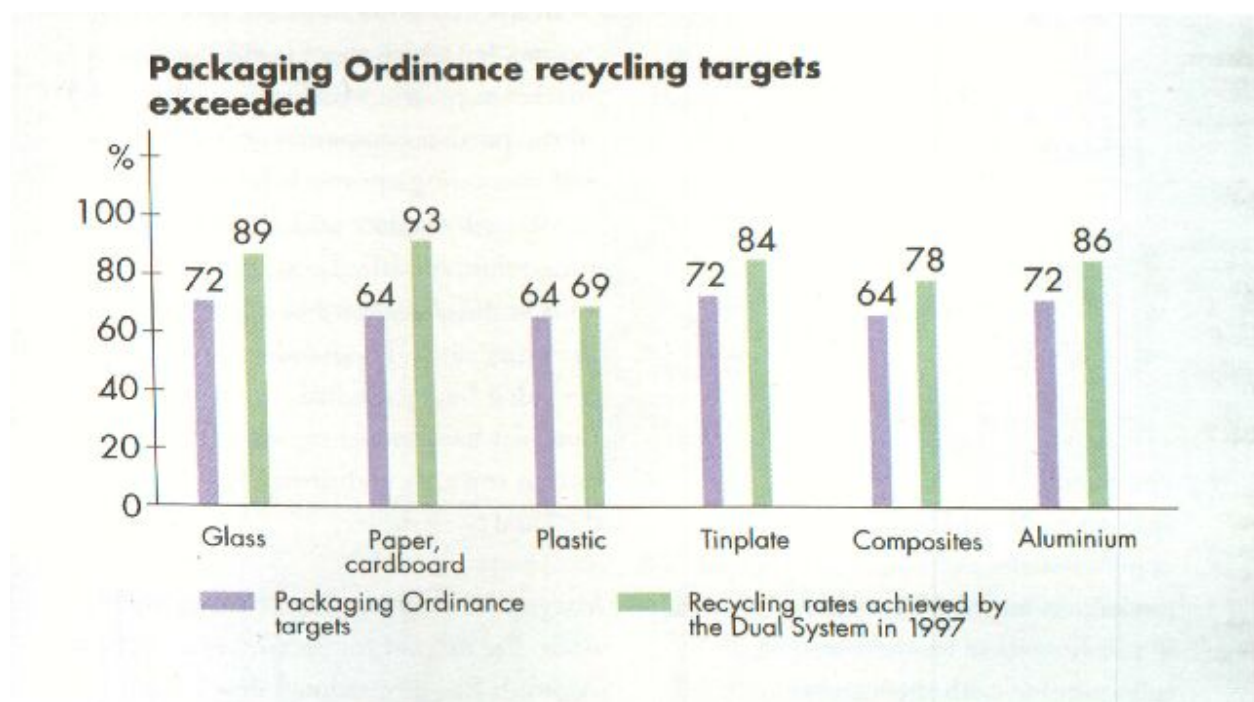


Table 3

Through the weight and volume based levy the DSD program has also encouraged great strides in the optimization of packaging. A survey done in 1992 found that four out of five companies had taken steps to "optimize" their packaging, thereby reducing their levy fees (DSD, 1992). More than half the companies that participated in the survey indicated that they had taken such steps because of the Ordinance. Some analysts now feel that the

large gains to be made in packaging reduction, given the current consumer realities, have been achieved in Germany (Schutt, 1997). Despite the strides that have been made DSD and the Government of Germany continue an awards program for excellence in packaging reduction. Figure 1, Figure 2, Figure 3, and Figure 4 provide examples of such innovation.

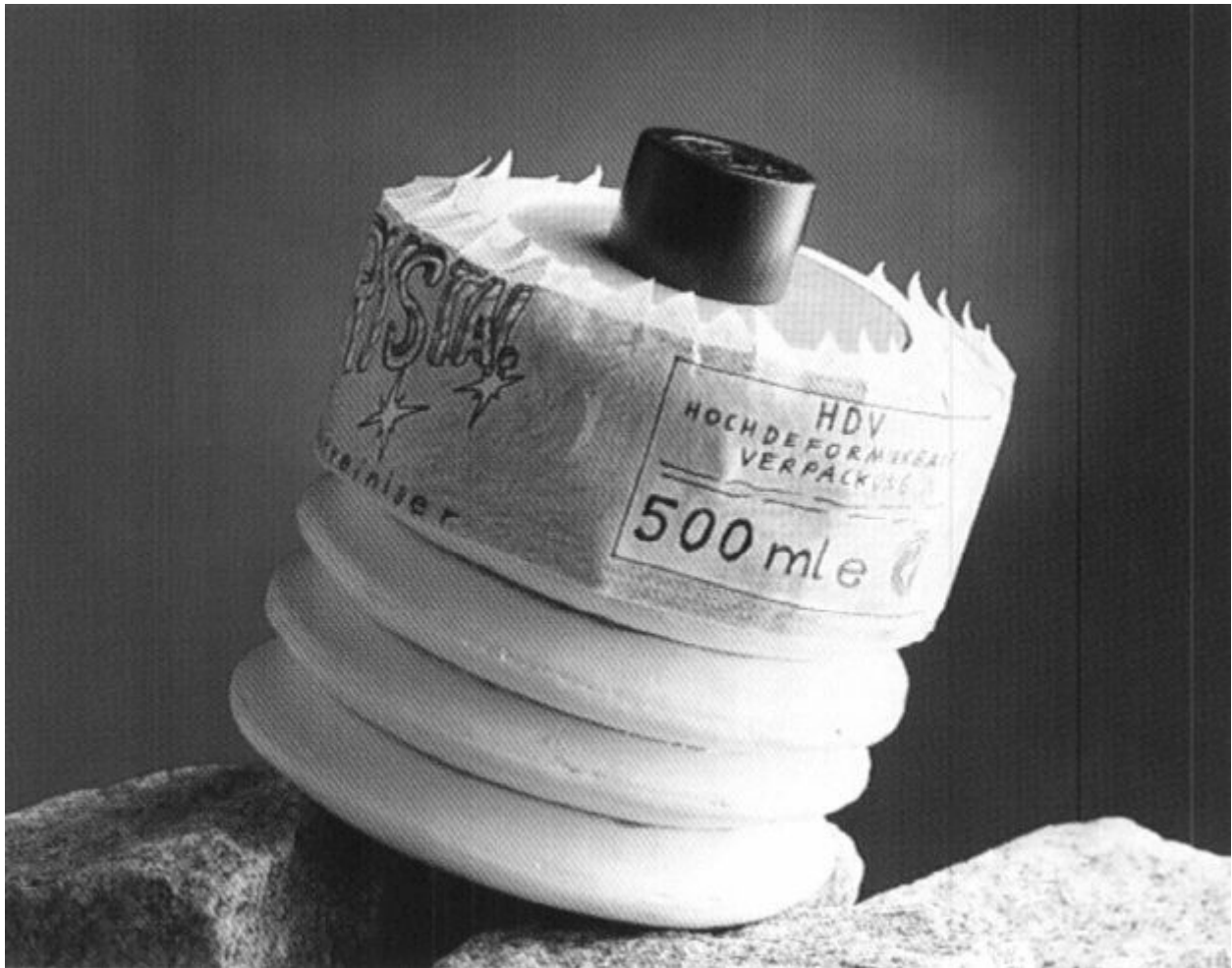


Figure 1



Figure 2



Figure 3



Figure 4

It is estimated that the DSD collection and sorting program currently provides virtually 100% coverage in service to homes and small businesses. Further, through promotion and education 9 of 10 households currently collect and sort their waste for inclusion in the DSD program.

Since the Ordinance does not allow the incineration of sorted packaged material for energy recover the recycling capacity for many factions had to be improved. When the DSD program first started there was considerable criticism because a large quantity of material was being shipped out of the country for recycling and incineration. Since these early days industrial scale recycling capacity within Germany for all packaging fractions, including plastic has developed. At this time the recycling capacity within Germany exceeds consumption for all fractions except plastics. It is estimated by independent sources that German industry has made investments of some 7 billion DM to improve sorting and recycling technology along with the creation of some 17,000 jobs (DSD, 1998).

While there have been innovations in sorting and recycling technology for all fractions, Germany has been leading the way in developing new techniques for plastics. This fraction has proved the most difficult to deal with and required the financial support of DSD to establish new approaches - costs that are reflected in the plastics levy. Technologies first had to be developed for the preparation of the mixed plastic fraction that includes everything from toothpaste tubes to non-refillable PET.

"Agglomeration" technology is one approach now applied that results in mixed plastics preparation through the following steps: shredding into pieces the size of postage stamps; impurity removal with air and eddy current separators; compaction into pellets. The pellets can then be stored in silos and transported in tank trucks. A visit to the Eldoff plastics preparation facility in Essen, which processes an average of 120 tonnes of plastic per day, reveals the scale of initiative needed just to prepare plastics for recycling.

Creating pellets only deals with half the problem. Technologies also had to be developed for the recycling of the prepared materials. A number of techniques are currently being used and researched. For example, feedstock recycling makes use of the chemical properties of the plastic - oil and gas. It has been found that injecting plastic agglomerate into the reduction process for the conversion of iron or into pig iron plastics can replace oil and gas in a one to one ratio.

The German Waste Management Act and its associated Ordinances have also strengthened the position of Germany's waste management and recycling companies. According to the Federal Environment Ministry there are now 240,000 jobs available in these sectors. The federation of German Waste Management Industries sets the figure at 340,000 including 100,000 people involved in the market in a self-employed capacity (DSD, 1998). The technological innovations, especially in terms of equipment also offer German companies a competitive advantage in marketing recycling equipment - a European market valued at US \$1.72 billion in 1996 (Frost, et al. 1997).

MANITOBA PRODUCT STEWARDSHIP PROGRAM (MPSP)

In a bid to operational the first voluntary multi-sector industry based stewardship program in North America the Grocery Products Manufacturers of Canada (GPMC) (now the Food and Consumer Products Manufacturers of Canada) introduced a "Packaging Stewardship Model" (CIPSI) in December of 1992 and later announced in July of 1993 that a pilot program would be "rolled out" in the province of Manitoba. The GPMC was made up of 170

member companies engaged in the manufacturing and marketing of brand products generally available through retail and food service outlets.

Manitoba was chosen by CIPSI due in part to the threat of deposit legislation on beverage containers and/or recycling quotas. Manitoba had enacted the Waste Reduction and Prevention Act in 1990 and the WRAP Strategy, under the Act, calls for "distributor responsibility" as a means of addressing the packaging waste management issue. In 1992, the first regulation under the Act was passed – The Beverage Container and Packaging Regulation. It established performance targets for the recovery of empty beverage containers with penalties for the failure to achieve the targets. Over \$500,000 in penalties was collected in 1993.

The CIPSI model developed called for the establishment of an industry funding organization (IFO) that would be financially supported by product manufacturers and importers. It was proposed that companies would pay a membership fee and be levied on the basis of the weight of the packaging material that they use. The moneys' collected by the IFO would be allocated in two priority areas: to support municipalities, presumably with the cost of collection programs and operating material recycling facilities and; to develop new uses for secondary materials and the provision of rebates to brand owners who increase the recycled content of their packages. In this way the proposed program was not unlike the DSD program.

The CIPSI proposal had a rough ride in Manitoba, as in other provinces, from stakeholders. Over the course of the negotiations a number of issues were raised, but two ended the discussions: the level of funding that would be provided to municipalities to operate recycling programs, and determining the avoided costs of municipal waste management as a result of the program. As well, negotiations became protracted and dragged out which some charged was due to the fact that the province of Ontario would have to live with any deal hammered out in Manitoba.

In their analysis of "who killed CIPSI" in Ontario, Chang et al. (1998) indicate that the government of Ontario was the culprit in that they removed the threat of regulation on industry, which makes voluntary programs an attractive alternative. In the Manitoba case, as CIPSI floundered, the Government began to consider the cost of recycling across the country and looked at ways such recycling might be funded in Manitoba through a broad based packaging and stewardship levy system similar to that proposed by CIPSI.

In this effort the government utilized proposals made in 1989 by the Manitoba Recycling Action Committee (RAC), which suggested a program to

make distributors (brand owners) responsible for minimizing waste from their products. The essences of these proposals were already incorporated in the WRAP Act so the legislative basis to take action existed.

The outcome was the creation of the Manitoba Product Stewardship Program (MPSP) under the Multi-Material Stewardship Regulation (1995), which replaced the Beverage Container Regulation. According to government officials the "MPSP is based on the principle of distributor responsibility embodied in the Waste Reduction and Prevention Act". The objectives established for MPSP include the following:

- maximize the reduction, reuse and recycling of designated products and materials;
- hold distributors of products and materials with the potential to become waste in Manitoba responsible for their share of the costs of managing those wastes; and
- provide stable, long term funding commitments to support municipal recycling programs throughout Manitoba.

MPSC

In 1995, the Manitoba Product Stewardship Corporation (MPSC) was put in place to administer the stewardship program as an arm's length statutory corporation independent of government. The purpose, goals, objectives and governance procedure of the corporation are set by the Multi-Material Stewardship Regulation (39/95). The corporate objective of MPSC are to:

- establish and administer a waste reduction and prevention program for designated materials for Manitoba consistent with the principles of sustainable development;
- provide for effective, efficient and economical waste management of designated materials; and
- administer the Multi-Material WRAP fund.

The Corporation has a multi-stakeholder Board of ten members: beverage distributors; newspaper publishers; the retail sector; grocery distributors; the City of Winnipeg; the Manitoba Association of Urban Municipalities; the Union of Manitoba Municipalities. Two additional positions are appointed by the Minister of Environment – the Consumers Association currently fills one and the other has been vacant for some months. The Board Chair is appointed by the Minister and is currently held by the Deputy Minister of Environment.

Although the WRAP fund was initiated in January of 1995 and the levy funds were collected from that date, MPSC was slow off the mark. Its by-laws were not approved until May of 1995 and its general manager not hired until September of 1995. Corporate identity and logo issues were not finalized until its year-end in April of 1996. The corporation is still criticized in some circles for its closed meetings and operating procedures.

Financing

The money necessary to achieve their corporate objectives comes from a "WRAP Act levy" on packaging products set out in the MPSP regulation. The levy is currently set at 2 cents per container and applies to non-refillable beverage containers for soft drinks, wine, mineral water and fruit beverages regardless of size and composition of the container. The levy is charged to beverage container stewards who pay the fees to the MPSC. Since most of the products sold in Manitoba are manufactured elsewhere, the first seller becomes the steward. As of 1999 there were 88 such product stewards licensed through the MPSP program, remitting their levies into the WRAP Fund. In addition, Manitoba Telecom Services pays a voluntary stewardship fee to the fund in order to have used telephone directories managed recycled. This accounts for less than 1% of total revenues of the program. Under the Regulation beverage containers sold under a deposit/return system, such as beer, are exempt from the program.

Collection and Recycling

The main vehicle that has been established to achieve the WRAP Act objectives is municipal funding for the collection and processing of eligible material recovered from the residential waste stream. The funding formula used to base support payments includes two elements:

- establishment of a per tonne municipal support payment based on the recycling system costs; and
- support payments paid to a maximum of 80% of approved municipal recycling program costs.

The average per tonne support payment to municipalities in 1998/99 was \$136.00 per tonne, which is an average of \$4.10 per person per year in participating municipalities (MPSP, 1999).

In order to be eligible for funding municipalities must determine the collection method they will use, register with MPSC, operate or contract with a waste management firm, report on material recovery, program costs and market revenues, etc. To assist in this task the MPSC has published the

"MPSP Municipal Guide Book: Program Registration and Reporting Forms". In addition, the MPSP identifies a list of eligible materials that must be collected if support is to be granted, including: newspaper, including flyers; aluminum food and beverage containers; glass food and beverage containers, polyethylene terephthalate (PET #1 plastic) food and beverage containers; and steel food and beverage containers. Municipalities may also collect boxboard, gable top cartons, HDPE #2 plastic containers, residential corrugated cardboard, magazines and aseptic cartons under the program.

MPSP also offers funding for school recycling through the STAR program. This program provides up to \$500 in funding per year for school recycling or waste reduction initiatives. In early 2000 MPSP also entered into funding agreements to support recycling in post-secondary institutions. MPSP also operates three other provincial wide programs including; Anti-litter programs, Education programs and Market Development programs.

Program Results

There are currently 157 municipalities taking advantage of the funding opportunity offered by MPSP representing almost 95% of the provincial population. The collection and sorting programs that are in place vary from municipality to municipality. Fifty-eight municipalities, including the largest community in the province, Winnipeg, offer curbside collection programs utilizing both blue box and bag systems. There is no doubt that without the MPSP program Winnipeg and many municipalities would still be without a comprehensive recycling system. Another 70 municipalities offer some sort of a depot system involving either central or multiple depots. Various levels and methods of sorting of collected material take place throughout the province, the bulk being manual hand sorting. In addition, over 600 of an eligible 870 K-12 schools in Manitoba signed up for the Star Program and all Colleges and Universities are developing plans to participate in the Star II program.

In fiscal year 1997/98, over \$4.46 million was paid to registered municipal participants. This increased to \$4.56 million in 1998/99. The City of Winnipeg, housing over half of the province population, accounted for 66% of the total payment. In 1997/98 over 32,000 metric tons of eligible materials from residential sources were collected for recycling. This represented an increase of 22% over the previous fiscal year. MPSC estimates that this achieves a 42% recovery rate of MPSP eligible materials (MPSP, 1998). The 1998 MPSC Business Plan calls for 60% recovery of eligible material from residential sources.

There are no guarantors as such within the MPSP program. Municipalities broker the eligible materials to a variety of recyclers in Manitoba, other Canadian provinces and the United States. Pine Falls Paper Company has, however, installed de-inking facilities at their facility in Manitoba that was in part a response to the MPSP program. Most of the recyclable paper currently goes to this facility at a favorable per tonne price.

In addition the MPSC now has a full range of educational materials available that municipalities can use to support their programs. It is no surprise that the communities doing so are seeing an increase in the volume of materials collected. MPSC has also taken steps to introduce reduction in their educational materials used by schools and municipalities.

VARIABLE STEWARDSHIP

The two 'product stewardship' programs for packaging discussed offer much different interpretations of "industry responsibility." In the German case, a top down regulatory approach has been taken that places an obligation on industry to reduce, reuse, or properly collect and recycle the packaging created from all the products they sell or use in the transportation of a good. In Manitoba an obligation has been placed on the beverage industry alone to fund municipal collection programs for recyclable materials. Each approach has its share of supporters and critics.

A substantial portion of the 'green' community in Germany rightly argues that the DSD program legitimizes the use of packaging. In fact, opposition to the program has remained since its outset and the greens have still not taken up the seats offered to them on the DSD Advisory Committee. Many also remain jaded from the initial DSD start-up problems that saw the German recycling industry unable to handle the glut of recyclable materials that came onto the market. There was particularly bad press for DSD in regard to the export of much of the plastics fraction for incineration in Eastern European countries.

The cost of the program has also come under the microscope. While DSD continues to reduce the costs of the program, around DM 4.1 billion was needed for operations in 1997. Industry analysts point to the fact that the cost in Germany to manage a tin soft-drink can is 10 times as much as in Belgium or France; 13.7 times as much to manage paperboard detergent boxes; 66 times as much to manage plastic soap bottles in Germany and 60 times as much in Austria, as it does in France (Stephenson, 1998). Such comparisons are fraught with danger, even in geographically close countries, because the systems for collection, the products eligible for collection and the recycling processes differ substantially. In France, some of the costs of

recycling are picked up by municipalities, they rely heavily on "bring systems" for the collection of recyclables and incineration is the usual choice for valorization through energy recovery, which is not allowed in Germany.

Critics have also argued that the gains made in material reduction during the course of the DSD program cannot be directly attributed to the program. Stephenson (1998) contends that reduction is in fact "the result of continuous improvements being made in packaging design and manufactured in all countries, and of the focus on innovation that has driven change in the packaging industry for at least one hundred years". There is no doubt that some industries were looking at thin walled food tins long before programs such as the DSD. Perhaps they saw the handwriting on the wall. There is also no doubt that many changes in packaging were seen after DSD and that significant innovation has occurred in a short period of time since the program was put in place.

It is interesting in this regard that many of the packaging innovations of multi-national corporations are in some cases not transferred to jurisdictions that do not have strong packaging legislation. Perhaps the best example of this is the refillable PET bottle. Distributors can avoid the recycling and valorization requirements of the DSD, other European stewardship programs, and MPSP, by utilizing refillable containers and deposit systems. This is the choice of many soft-drink suppliers in Europe. Exclusively Coca-Cola Ltd. in their European operations for over a decade has used refillable PET bottles while no such bottles have appeared in North America.

Despite the critics the European Parliament was convinced that a broader packaging stewardship program was needed in the EU. The EU formalised its policy initiatives by passing the Packaging and Packaging Waste Directive, (94/62/EC) (the Directive) to take effect in all Member States. The Directive's first objective is to harmonize member states packaging waste efforts "in order, on the one hand, to prevent any impact thereof on the environment, or to reduce such impact, thus providing a high level of environmental protection and on the other to ensure the functioning of the internal market to avoid obstacles to trade..." (European Parliament, 1994). The Directive recognizes a waste management hierarchy that places reduction at the pinnacle. The Directive also sets targets to be met in the first five years: take-back 50-65% by weight; recycling 25-45% by weight (minimum of 15% for each material). As well, mandatory return systems and mandatory labelling are required.

In Manitoba, its critics view the 2-cent pre-disposal levy as nothing more than a tax grab. The beverage industry is not viewed as a steward, and the government is seen as picking the consumers pocket. This position is caused

by two factors: 1) it is clear that at least the major soft drink producers are adding the two cent levy to the bills of their retail clients like the large grocery store chain Safeway. Safeway, in turn, adds the two cents to the consumers' bill. 2) The beverage industry has been unwilling undertake research to show how the costs of the program are being distributed. As such, many argue that the program is not encouraging the beverage industry to internalize the costs of dealing with the waste created by their products that might in turn cause changes in package design and composition. The principles of stewardship and the idea of pre-disposal levies are clearly being confused in the program.

This is complicated further by the government's reluctance to bring more stewards into the program as allowed for under the Regulation. Since the outset there have been calls for levy redistribution on a wide range of designated materials. The call for levy redistribution has even come from the MPSC in their 1998 business plan. Still the government has not taken action. The only hint made in this regard is that newsprint may be the next material to be levied. Unfortunately, the Government of the day also actually suggests that this might be achieved through Provincial Sales Tax credits on the taxes currently charged to newspaper distributors. This suggestion contravenes the principles of stewardship and if implemented would send the wrong message to other potential stewards. Such proposals are also reminiscent of the \$860,000 in Beverage Container regulation fines incurred by the beverage industry in 1994/95 but waived by Government with the passage of the MPSP regulation.

It is of interest that the beverage industry has been largely silent on the issue of levy redistribution. This could suggest that they are in fact willing to pay 6.5 million dollars a year to avoid regulation that they perceive as more onerous, such as weight and volume based levies and/or refillable quotas/deposits. In fact, they could avoid the levy by implementing a deposit system. Proponents of voluntary approaches should also note that other stewards are not stepping forward to assume their responsibility within the program. In fact, some are lobbying very hard not to have such responsibility imposed, notably newspaper publishers.

Some have also noted that while the beverage industry is the only "steward", the recovery rate of their packages is still low. In 1996, only 21% of glass containers, 28% of PET containers and 29% of aluminum were being recovered. Since 1996 these figures have not been made available by MPSC, rather they report the total quantity of eligible material being diverted from the residential waste stream, as noted above (Morawski, 1999).

Another obvious concern voiced is that 20% of the cost of collecting eligible materials is still being borne by the municipal taxpayer. Insiders indicate that industry lobbied for the 20% figure so that municipalities would be a "partner" in the program, thereby remaining realistic about the type of collection and sorting program they could afford. This removes some industry responsibility and leaves municipalities with three choices: not sign up; have incomplete programs; and/or pull out of the program if the costs get too high.

Two municipalities hinted at pulling out of the MPSP program in the past year citing the municipal tax burden. While this cannot be interpreted as the start of a trend, consideration should be given to mandatory participation, especially as land filling prices fall. The maximum per tonne landfill price in Manitoba is \$40.00. As well, the City of Winnipeg, with 60%+ of the population of Manitoba, still does not have a multi-family recycling program. Such a program has been discussed since the implementation of BlueBox recycling in Winnipeg and establishing such a program is also a goal of MPSC. Municipal politicians however have still not been willing to implement such a program due to cost and in fact continue to argue that they are still paying more than 20% of the costs of the curbside program.

Establishing a public identity has also been a challenge for MPSC. The public does not know how recycling is being funded and is confused as to the purpose of the environmental levy on beverage containers. The problem was epitomized by one Winnipeg resident who asked: "When will the government take the environmental tax off of beverage containers now that we have a BlueBox curbside recycling program?" (Fenton and Sinclair, 1997). Removal of the levy would of course remove the base of support for the program.

THE FINAL WORD

Packaging stewardship is extremely complex. It is a process through which industry is assigned and accepts responsibility for the impacts of the packaging that they use. It can therefore be a powerful vehicle to encourage internalization of environmental costs in the price of a package and its contents (Fenton and Sinclair, 1996).

The DSD and MPSP programs have had a very positive impact on the collection of used packaging material and its processing. For most of us though, the use of the word 'stewardship' in the name of the Manitoba program can only be viewed as an indication of future intent. Currently there is no impetus for either distributors (brand owners) or the consumer to reduce the quantity of resources consumed. MPSP is clearly more oriented toward packaging waste valorization than stewardship.

In the Canadian context though, Manitoba still runs the only program of its kind. As Sinclair and Fenton (1997) note, this creates at least two design problems: "Firstly, it invites complaints from businesses and consumers about an unfair tax in Manitoba that is not levied elsewhere. Secondly, it likely raises to prohibitive levels, the cost of developing a comprehensive levy system that would impose differential levies according to the different stewardship costs of the product."

National action on packaging stewardship was taken in Germany, France, Belgium, and the Netherlands prior to EU Directive of packaging and packaging waste. With the new Directive, all EU nations have taken similar national action. In early 2000 the OECD also released a guidance manual for governments to assist in the implementation of extended producer responsibility programs (OECD, 1999). It is estimated that new EPR activities will result in the recovery of 30 million tonnes of packaging by the year 2000 (Hagengut, 1999). Impressive figures by all accounts. Mature programs such as DSD can now move on to consider more difficult questions such as levy credits based on how environmentally friendly a package is.

Given the size of the Canadian market, it is important that a basic national levy program be implemented with modest regional variation only where justified by cost differences. The federal government continues to dabble with voluntary initiatives such as the Canadian National Packaging Protocol. Harmonization is needed for provinces like Manitoba to move ahead given their small markets - 4% nationally.

A recent Germany study concluded that; "A preference for negotiated solutions on principle as currently established by the Federal Government in Germany, is 'counterproductive'. If government clearly signals its willingness to refrain from using regulatory or economic instruments in favor of industry agreements, it weakens its negotiating position" (Chang, et al., 1998).

Corporations have been set-up to reduce liability. Stewardship requires that they assume liability. Given the experiences with voluntary initiatives and CIPSI within Canada, it would seem time for a more top-down approach - or at least the threat of one - if we truly want out 2 cents worth! Further, the above discussion indicates that assuming liability for packaging waste would require generating industries to take back packaging generated and prevent waste. At this point in time the best vehicle for achieving this is a industry based levy fee that must be incorporated into the production cost of the product.

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