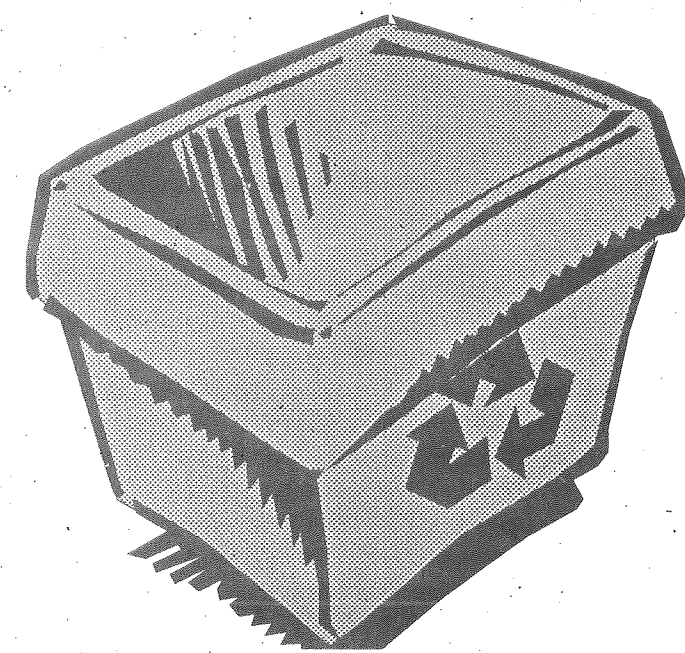


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WHO PAYS FOR BLUE?

FINANCING RESIDENTIAL
WASTE DIVERSION
IN ONTARIO



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WHO PAYS FOR BLUE?

FINANCING RESIDENTIAL WASTE DIVERSION IN ONTARIO

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September 1993

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EXECUTIVE SUMMARY

1. Introduction

The Ontario Blue Box system is widely regarded as one of the most successful recycling programs in the world. Over 300 Ontario municipalities have established Blue Box programs. Using the Blue Box has become a symbol of public commitment to environmental protection.

Despite these successes, the Ontario program is in serious trouble. Over the past year, many municipal representatives have expressed the desire to cut back, or even terminate, the Blue Box in their communities.

The source of their criticism is clear. The capital costs of establishing Blue Box systems in Ontario were shared evenly by the province, the participating municipality and Ontario Multi-Material Recycling Incorporated (OMMRI). In addition, the province was to provide assistance to municipalities for one third of the operating costs of the program for the first five years of its existence. After that point, it was assumed that the revenues from the sale of recovered materials would be sufficient to maintain the system. This has not proved to be the case. Markets for secondary materials have remained weak, and municipalities have typically received an average of \$30 per tone for the recyclable which they collect, while Blue Box services are estimated to cost in the range of \$180/tonne.

In the result, 60% of the cost of operating the Blue Box system is currently paid by municipalities participating in the system. The provincial government covers 22% of the cost, while materials sales account for 14%. The voluntary contribution of producers, through OMMRI and its partner organization OMMRI II, amounts to only 4% of the system cost.

The present structure of the Blue Box system leaves municipalities financially and operationally responsible for the management of a waste stream over whose contents they have no control. In addition, the system provides no incentives to producers and users of packaging to consider the redesign of products, or the reduction of their use of packaging, to address the costs of 3Rs activities. Nor are producers provided with any incentives to use recovered materials in their products or packaging.

Ontario's Blue Box funding crisis has occurred in the context of growing acceptance in Europe and, to an increasing degree, the United States, of the principle that producers must assume responsibilities for the post-consumer management of their products and packaging. In this paper we propose to extend this principle of "product stewardship" to Ontario.

2. The Concept of "Product Stewardship"

The product stewardship concept extends the widely accepted principle of "polluter pays" to solid waste management. A stewardship system is generally held to have three key elements:

- i) producer internalization of the costs of the collection and sorting of post-consumer materials;
- ii) producer responsibilities for the development of markets for, and the use of, recovered materials; and
- iii) an effective "backdrop" mechanism to ensure fairness in that all producers must accept responsibilities for the post-consumer management of their products and packaging.

3. System Goals

The proposed system seeks to achieve two goals:

- i) to ensure the development and sustainable financing of 3Rs infrastructure in Ontario; and
- ii) to internalize waste management costs and thereby provide incentives to the producers of goods and the users of packaging to reduce waste and to accept responsibilities for the reuse or recycling of their products and packaging.

The achievement of these goals is essential to the establishment of environmentally sustainable patterns of resource and land use in Ontario.

4. System Scope

The proposed system will initially apply to all consumer packaging, and those consumer products already dealt with through the existing residential Blue Box and deposit-return systems in Ontario. This will include: newspapers; magazines; telephone books; grocery packaging; beverage containers; and other types of consumer packaging. The system will apply to domestically produced and imported products and packaging. Packaging and products for export from Canada will be exempted.

5. System Structure

The proposed system has two major components to address different elements of the municipal solid waste stream:

- i) a **Deposit-Refund System** for certain types of products and packaging,

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particularly those which pose special waste management problems; and

- ii) a **Producer-Supported, Reduction, Reuse and Recycling System**, combining elements of the German Dales System Deutschland (DSD) - Green Dot system and the systems recently proposed by the Ontario Waste Reduction Advisory Committee (WRAC) and the Grocery Products Manufacturer of Canada (GPMC), to deal with the majority of the consumer products and packaging in the waste stream.

i) The Deposit-Return System

Deposit-return systems have been widely employed in Canada to ensure the reuse of a wide range of beverage containers, particularly soft drinks and beer since the late 1960s and early 1970s.

Under the proposed system, deposit-return provisions would apply in three cases:

- 1) existing deposit-return requirements, such as those on beer bottles, would continue, as would the province's legal requirement of 30% of sales in deposit-return containers for soft drinks;
- 2) producers would have the option of voluntarily establishing deposit-return systems, either in agreement with retailers or through self-operated systems, under the general regulation where they feel that this is the most efficient waste diversion approach for their product or packaging; and
- 3) new requirements would be applied to specific product or packaging types, such as disposable products or products which cause waste management problems. The most likely initial candidates would be products likely to become household hazardous wastes, such as batteries, and their containers.

ii) The Producer-Supported Reduction, Reuse and Recycling System

This stream of the Ontario product stewardship system would deal with the post-consumer management of most consumer products and packaging. The core of the system which is proposed is a "packaging" or "waste management" levy on the range of consumer packaging and products to be captured by the system. Exemptions would be granted from the levy for items subject to mandatory deposit-return requirements, as outlined above, or for which the producer (brand owner or distributor) presents a waste reduction, reuse or recycling plan which is acceptable to the province. Such plans could include:

- o the elimination of 90% by weight of the subject packaging;

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- o the voluntary establishment of a self-operated or retailer operated recycling or reuse (deposit-return) system with a 90% recovery rate; or
- o participation in an industry-supported recycling system combining elements of the German DSD system and the WRAC and GPMC proposals, which, through an Industry Funding Organization (IFO), would both finance the curbside Blue Box collection and sorting of IFO members' materials and provide commitments regarding market development and utilization for those materials. Such systems would have targets of a 90% collection rate and a 90% utilization rate.

The diversion targets for waste reduction, reuse or recycling plans would be measured from a 1988 base year and would have to be achieved within five years of the implementation of the stewardship system.

The system structure is intended to ensure that the cost internalization and material collection and utilization of features of the producer-based recycling system are comparable to those of a deposit-return system, as producers have traditionally proposed curbside multi-material recycling as an alternative to deposit-return requirements.

The levy and exemption system would be implemented as part of the province's May 1994 Budget. The levy would be collected at the distributor or brand owner level, not at the point of sale. The levy would average 1 cent per unit of packaging sold in Ontario, although it would vary according to the type of package employed.

6. Supporting Policy Measures

A number of supporting policy measures are also proposed. These include the enforcement of existing deposit-return requirements on beverage containers, the implementation of full-cost waste disposal pricing for industrial, commercial and institutional and residential waste generators, banning the export of solid waste, market development measures for secondary materials, and technology development support.

7. Conclusions

The proposal presented here builds on the existing system in Ontario, the models employed in other Canadian provinces and other countries, and recent proposals for reform from the Ontario Waste Reduction Advisory Committee and the Grocery Products Manufacturers of Canada. The system can be implemented through budget measures and current Ontario legislation, particularly the Waste Management Act amendments to the Environmental Protection Act. It is also intended to be consistent with the requirements of international trade law. A draft regulation which would implement the deposit-return and levy mechanisms is included as Appendix I of this report.

WHO PAYS FOR BLUE? FINANCING RESIDENTIAL WASTE DIVERSION IN ONTARIO

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Canadian Environmental Law Association

September 1993

I. INTRODUCTION

The Ontario Blue Box system is widely regarded as one of the most successful recycling programs in the world.¹ Over 300 Ontario municipalities have established Blue Box programs,² and the model has been adopted by other jurisdictions in Canada, the United States and Europe. In addition, participation in the Blue Box system has become a symbol of public commitment to environmental protection. In communities with Blue Box systems, sustained participation rates of 80%-90% are the norm.³

Despite these successes, the Ontario program is in serious trouble. Over the past year, many municipal representatives expressed their desire to cut back, or even terminate, the Blue Box in their communities.⁴ Claims that Blue Box recycling costs municipalities up to \$200 per tonne,⁵ while the costs of collecting and disposing of wastes are said to be in the range of \$90-\$120 per tonne,⁶ have been at the centre of the debate.

The capital costs of establishing Blue Box systems in Ontario were shared evenly by the province, the participating municipality and Ontario Multi-Material Recycling Incorporated (OMMRI).⁷ However, initially OMMRI made no commitment to provide ongoing financial support to the system once it was established. For its part, the province was to provide assistance to municipalities for one third of the operating costs of the program for the first five years of its existence. After that point, it was assumed that the revenues from the sale of recovered materials would be sufficient to maintain the system. This has not proved to be the case. Markets for secondary materials have remained weak, and municipalities have typically received an average of \$30 per tonne for the recyclables which they collect.⁸

In the result, 60% of the cost of operating the Blue Box system is currently paid by

municipalities participating in the system. The provincial government covers 22% of the cost, while materials sales account for 14%. The voluntary contribution of producers, defined as the manufacturers, distributors or importers of consumer products and the fillers of consumer packaging,⁹ through OMMRI and its partner organization OMMRI II, amounts to only 4% of the system cost.¹⁰

The present structure of the Blue Box system leaves municipalities financially and operationally responsible for the management of a waste stream over whose contents they have no control. In addition, the system provides no incentives to producers and users of packaging to consider the redesign of products, or the reduction of their use of packaging, to address the costs of 3Rs activities. Nor are producers provided with any incentives to use recovered materials in their products or packaging.

Clearly, this situation cannot continue indefinitely. Municipal criticism of the existing system is, not surprisingly, becoming increasingly serious. The conflict is likely to intensify as provincial funding commitments for the operation of the Blue Box system expire, and the province's new Waste Management Act regulations, requiring that all Ontario municipalities with over 5,000 residents provide Blue Box recycling services, come into force.

What is required is a system which will achieve two goals. First, it must ensure the development and ongoing financial viability of waste reduction, reuse and recycling (the 3Rs) infrastructure in Ontario. Second, the system must provide producers and the users of packaging with strong incentives to change their behaviour in terms of reducing the amounts of waste associated with their products and packages, developing reusable products and packaging, or facilitating the cost-effective recycling of their products and packaging. Such changes in behaviour are essential to the establishment of environmentally sustainable patterns of resource use in Ontario and around the world.

The proposal presented here attempts to provide a realistic and environmentally sound model through which these goals can be met. It puts forward the essential elements of a system which builds on the existing system in Ontario, the models employed in other Canadian provinces and other countries, and recent proposals for reform from the Ontario Waste Reduction Advisory Committee (WRAC) and the Grocery Products Manufacturers of Canada (GPMC). This system can be implemented through budget measures and current Ontario legislation, particularly the Waste Management Act amendments to the Environmental Protection Act. It is also intended to be consistent with the requirements of international trade law.

II. THE CONCEPT OF PRODUCT STEWARDSHIP

The concept of product stewardship is intended to address the problems of financing 3Rs infrastructure, and of providing the producers of goods and the users of packaging with incentives to consider the post-consumer cycle management of their products and packaging in product and packaging design and use. Product stewardship systems are based on the principle that if the producers of goods and users of packaging can be compelled to internalize the costs of the post-consumer processing of their products and packaging, they will be provided with very strong incentives to reduce waste and to reuse or recycle products and packaging. In sum, the concept of product stewardship is an extension of the widely accepted principle of "polluter pays" to municipal solid waste. Its application can take a number of different forms.

1) Deposit-Return Systems

The deposit-return systems for soft drink containers and beer bottles introduced in many Canadian provinces in the 1970s, including British Columbia (1970), Alberta (1971) and Saskatchewan (1973) were early applications of the product stewardship principle. Deposit-return systems are also widely applied to beverage containers in Western Europe and in some U.S. States.¹¹ Indeed, the Organization of Economic Cooperation and Development (OECD) has concluded that: "well-functioning deposit-return systems diminish waste disposal problems, littering and the use of energy and raw materials."¹²

For its part, in 1976 the Ontario government introduced regulations under the Ontario Environmental Protection Act applying deposit-return requirements to soft drink containers. The regulation required that 75% of all soft-drink containers sold in the province be refillable. However, the requirement was not met, as it was never strenuously enforced.¹³ A full deposit-return system for beer bottles exists in Ontario through the Brewers' Retail system.

2) Producer-Supported Recycling Systems

A new dimension of product stewardship was established in December 1985. At that time, the Ontario government relaxed the 1976 soft drink container regulations, permitting the use of aluminum cans and reducing the requirements to provide refillable containers, provided that recycling requirements were met. As part of this arrangement, in the spring of 1986 Ontario Multi Material Recycling Incorporated (OMMRI) was established by the soft drink industry as a vehicle to provide funding (\$20 million) for the curbside collection and recycling of soft-drink containers.

The capital costs for the establishment of the now familiar Blue Box recycling

system were to be split evenly between OMMRI, the province and the participating municipalities. In the result, Blue Box systems were established in hundreds of Ontario communities between 1986 and 1992. A second phase of OMMRI, OMMRI II was initiated in 1990, providing a five-year \$45 million capital commitment from firms outside of the soft-drink industry. In practice, OMMRI II's grants to municipalities have amounted to between three and four million dollars per year, and the organization has fallen behind in its commitments to municipalities in recent years.¹⁴

Although the Blue Box program is widely regarded as a success, particularly in terms of altering the public's attitudes towards waste, the system suffers from a number of serious problems, which threaten its survival. Industry contributions to OMMRI and OMMRI II have always been voluntary in nature. In the result, many producers who contribute to the waste stream, and whose products and packaging are collected through the Blue Box, provide no support to the system. Furthermore, the level of contribution by participants in OMMRI and OMMRI II has not reflected the real post-consumer management costs of the contributors' products and packaging.

The absence of ongoing support for the operational costs of Blue Box programs to municipalities has emerged as another serious deficiency in the OMMRI system. In March 1992 the original participants in OMMRI began to provide some operational financial support to the program. These payments are intended to cover the difference in costs to municipalities between recycling OMMRI's members' containers through the Blue Box system and collecting the containers for disposal. Under the "top-up" program, as of May 1993 the soft drink industry had provided \$700,000 to municipalities in support of Blue Box operations.¹⁵

The weaknesses of the OMMRI system provide important lessons in terms of the establishment of the essential elements of a producer-based recycling system. A successful system must have three key components:

i) Producer Internalization of the Costs of the Collection and Sorting of Dry Recyclables

The first element of a stewardship system must be the internalization of the costs of the collecting and sorting of dry recyclables by producers. This is consistent with the extension of the polluter pays principle, and ensures that the system costs to individual producers begin to reflect the real post-consumer management costs of their products and packaging. This will provide for adequate system financing, while giving producers very strong economic incentives to alter the design of their products and their use of packaging to reduce waste, and to facilitate reuse or recycling.

The most commonly identified mechanism to provide for cost internalization is the imposition of a Variable Unit Charge (VUC) on producers' products and packaging which

reflects their real collection and sorting costs. Such charges can be imposed by governments, or through an Industry Funding Organization (IFO) such as OMMRI, established for the purpose of providing a conduit for producer support to the recycling system. In either case, the charge structure should have the flexibility to quickly reflect changes in packaging use and design, product, or process design. This will make certain that producers receive an immediate return on positive 3Rs actions.

ii) Producer Responsibility for the Use of Recovered Materials

The second element of a producer-supported recycling system is the establishment of producer responsibility for the use of recovered materials. This is essential to the development of markets for materials recovered through the recycling system, and in providing incentives to producers to consider waste reduction, reuse or recycling in product or packaging design.

iii) An Effective "Backdrop" Mechanism

OMMRI's voluntary structure is widely acknowledged as one of its key failings. The OMMRI experience indicates that the system must provide direct incentives to producers to participate in, and provide financial support to, the recycling system. Some form of "backdrop" is required to ensure that producers cannot "free ride" on the recycling system.

The implementation of a system which successfully incorporates these elements will result in significant reductions in the use of new natural resources, and the negative environmental effects associated with their extraction. In addition, it will avoid the loss of valuable land resources utilized as waste disposal facilities, with their accompanying on- and off-site environmental impacts.

III. EXISTING AND PROPOSED PRODUCT AND PACKAGING STEWARDSHIP SYSTEMS

1) Western Europe

The concept of product stewardship has gained growing international acceptance, especially in Western Europe. The most comprehensive stewardship system has been introduced in Germany, through the Packaging Ordinance of 1991. The German model initially met with strong objections from Germany's European Community partners, as it was construed as a non-tariff barrier to trade.¹⁶ However, the European Community Commission's Legal Service and Industrial Affairs Directorate has concluded that Germany's packaging law "... constituted a barrier to trade that was nonetheless justified by the environmental goals pursued."¹⁷ In addition, a number of European countries, including France, Spain, and Belgium have begun to develop stewardship systems of their own, based on the German model. Duales System Deutschland (the German Industry Funding Organization) has stated that it will assist other countries in introducing similar or identical sorting and collection systems.

i) Germany - Duales System Deutschland (DSD)¹⁸

Scope & Mandate:

Duales System Deutschland (DSD) is a German industry sponsored collection and recycling system for packaging waste which functions in tandem with a national "Green Dot" licensing system. DSD, owes its existence to the German Packaging Ordinance (Verpackungsverordnung) of 1991¹⁹ which was issued under the Waste Avoidance and Waste Management Act (Abfallgesetz) of 1986. The aim of the Packaging Ordinance is to divert packaging wastes from disposal (packaging waste comprised 30% by weight and 50% by volume of all household waste in Germany in 1990) and gives full responsibility for collecting and separating packaging wastes to producers. The main goal of the DSD is to reclaim and recycle non-refillable packaging. The principle of the DSD/Green Dot system is to integrate waste management costs for packaging into the price of the product.

The Packaging Ordinance requires that all packaging be made of reusable or recyclable materials and must be reused or recycled. Manufacturers and distributors of packaging are obliged to accept its return after use, and reuse or recycle it outside of the public waste disposal system. Packaging which is part of an existing waste collection or reuse system is exempt. The ordinance stipulates that retailers can exempt themselves from the collection and deposit provisions which apply to sales packaging if they participate in a privately funded collection system that guarantees recycling rates. If

retailers do not participate in a private collection system, or do not meet mandated collection and sorting quotas, deposits will be imposed on sales packaging.

To protect existing reusable/refillable packaging, existing requirements for refillable beverage containers have been maintained and are expected to increase. To avoid deposits and requirements to collect sales packaging, with the disruption that this would cause to the retail sector, German retail and industrial sectors have formed a company, Duales System Deutschland (DSD). DSD is to collect, sort, and recycle waste packaging materials independently of the public waste disposal system.

To join the company and participate in the DSD system a product manufacturer must ensure that product packaging is reusable or recyclable, and must pay a license fee. This entitles the product(s) to a "Green Dot" label. The "Green Dot" signifies that a product manufacturer is participating in the DSD and exempts the product from a retail deposit.

How it Works/Financing:

The DSD is financed solely by the Green Dot (Grüner Punkt) licensing system. This symbol identifies packaging which fulfills two requirements: an acceptance and recycling guarantee has been issued by the relevant industry or company for the packaging material in question; and the manufacturer or retailer of the goods in question has signed a contract with DSD GmbH for the use of the symbol and has paid a license fee. The symbol also conveys information to the consumer - that, after use, the packaging belongs in one of the collection systems organized by the DSD.

DSD collection runs parallel to the municipal disposal system. The collection of packaging waste is covered by contracts between DSD GmbH and municipal or private waste disposal firms. Glass, cardboard and paper are collected at pre-existing municipal drop-off depots. All other materials are collected at curbside by agents of the DSD.

Materials are to be sorted at industry financed facilities, although many of these plants are still to be built. In practice private and/or public sector waste disposal firms collect used packaging, sort it into individual material fractions and forward these to so-called "guarantors" on behalf of the DSD. Guarantors are packaging manufacturers or companies established specially for the recycling and marketing of secondary materials who have agreed to accept and recycle materials collected by the DSD. Guarantors exist for six different material fractions: glass; paper; tinfoil; aluminum; laminate board packaging; and plastics.

The license fee is used to pay for contracts drawn up with waste disposal firms and hence to develop the infrastructure required for the collection and sorting of packaging. However, the actual recycling costs are not covered by the fees. The manufacturers, through their guarantors, are responsible for recycling. Recycling costs accrue to packaging manufacturers, are included in their cost calculations, and passed along to the

consumer goods manufacturers.

Independent monitoring agencies have been established which will verify the flows of materials to ensure that quotas are met. These Technical Inspection Agencies (TÜVs) will inspect the sorting plants and submit regular reports on incoming and outgoing materials. It is the job of the TÜVs to ascertain whether recycling facilities in Germany and abroad are capable of recycling the sorted packaging materials as specified in the Packaging Ordinance.

Results

The DSD/Green Dot System has had encouraging results. There have been significant packaging reductions (26%) and problematic materials such as blister packs PVC, laminates and composites are being taken off the market and replaced with materials that are easier to recycle. DSD's recent introduction of differential unit charges for different types of packaging has been central to this process of packaging type "de-selection."²⁰

At the same time, the system has suffered from some serious problems, as large quantities of secondary materials have begun to come on stream without adequate markets to absorb them. Indeed, Germany's inability to recycle all of the packaging collected through DSD is flooding other EC countries' recycling industries with free secondary material, especially plastics.²¹ At the French-German Environment meeting in February 1993, the German DSD agreed to return the plastic waste to Germany.²²

ii) France - Eco-Emballages, Valorplast and Adelph

The French government initially objected very strongly to the German DSD system as a non-tariff barrier to trade. However, in April 1992 the French government introduced a Household Packaging Decree based on the German model. In response, industry groups established Eco-Emballages, a French national system for the industry financed recovery of packaging. Eco-Emballage's fees are based on either weight or volume.²³

In addition to Eco-Emballages, a Valorplast program was been established by French industry to work in conjunction with Eco-Emballage. Valorplast is to be responsible for setting up a collection system for plastic bottles, including both drop-off facilities and curbside pick-up. Valorplast will also be responsible for developing new markets for recycled plastics.²⁴

A third program, Adelph, has been established by wine and spirit producers to recycle wine and spirit containers. Adelph involves the Glassmakers' Union, which is responsible for glass collection, and partnerships with both Cyclem, a glass recycling organization and the French Packaging Institute.²⁵ Products participating in Eco-

Emballage, Valorplast and Adelph all carry a DSD style "Green Dot."

The French government is considering a Decree regarding non-household packaging which will assign responsibility for its disposal to manufacturers and end users. Reuse, recycling or energy recovery through incineration will be the only acceptable methods of disposal.²⁶ The French government is also following Germany in drawing up legislation obliging producers to take back and recycle a range of used products, including electronics and automobiles.²⁷

iii) Belgium - Packaging Taxes and Fost-Plus

In January 1993 the Belgian government proposed a system of packaging taxes. These were enacted in the summer of 1993, and are to come into force in January 1994. The taxes apply to a broad range of packaging, including bottles, non-food containers and boxes. The system includes the following components:

- o on containers of sparkling waters, beer, cola, and soft drinks a charge of FB 15 (~ \$0.60 Cdn) per litre, with a minimum charge of FB 7 (~\$0.28 Cdn), with 19% VAT payable on the tax; and
- o refillable containers are subject to a deposit of FB 7 (~\$0.28 Cdn) for containers over 50 cl.

Beverage containers are exempted if the manufacturer can show that it is meeting stringent recycling targets (i.e. 80% on non-refillable glass or metal containers; 70% on non-refillable plastic containers) or if it is a member of a recognized organization which meets these targets. Incineration and energy-from-waste uses are not counted as contributing towards meeting the recycling targets.

The taxes are also applied to industrial packaging for inks, glues, oils solvents and pesticides unless there are deposits imposed by producers on the packaging. Exemptions are provided for papers, for corrugated and solid cartons, and for folded cartons and flexible packaging, provided that post-consumer recycled content requirements are met (60% by 1994, 80% by 1998 for papers; 40% by 1994, 60% by 1998 for cartons and flexible packaging). In addition, taxes will be applied to various types of paper and newsprint, with exemptions for recycled content. Finally, taxes are to be applied to batteries, pesticides and disposable articles such as razors.²⁸

In response to the government's January proposals in May 1993 packagers, packaging users and retailers in Belgium launched a joint company modelled on DSD and Eco-Emballages to organize the collection and recovery of packaging waste. Like the French and German models, Fost-Plus system is to be financed by a levy on each unit of packaging and will use the "Green Dot" on the packaging of the firms contributing to it. The Belgian plastics industry does not participate in the Fost-Plus system, but intends

to develop a recycling system of its own.²⁹

iv) Spain

A proposal for a packaging waste recycling system has been put forward by the Federation of Spanish Business Organizations (CEOE). The system would be managed by a voluntary non-profit group of manufacturers, distributors and the packaging industry. It would involve voluntary agreements between state, regional and local governments and Spanish industry organizations. Participating companies would assist local authorities by paying the difference between the cost of waste separation and recovery and the cost of traditional waste disposal. Participating manufacturers would be able to mark their products with a "Green Dot."³⁰

v) Netherlands

The Dutch government approved a bill in 1992 that would give the Ministry of Housing (VROM) the authority to enforce industry participation in waste collection and recycling programs. The bill is expected to go to parliament in early 1993.³¹ However, the Ministry will only be able to apply the bill at the request of a significant majority of the manufacturers and importers within a given sector. Industry representatives argue that those within their sector who do not participate in recycling systems have an unfair advantage, as they do not incur the same expenses as those who are participating.³²

In the meantime, several industries have started waste reduction and recovery schemes of their own. For example, the plastics industry association and the Dutch agricultural board plan to sign an agreement which would mandate the collection and recycling of plastic foils used in agriculture and horticulture.³³

vi) Sweden

Presently, producers and firms which use plastic bottles are required to have handling permits to sell their products in the Swedish market. Handling permits are granted to producers when they demonstrate that their plastic containers are part of a deposit/return system and that 90% of the bottles can be reused or recycled. Changes to the present law, proposed for January 1, 1994 (Ecocycle Bill), will extend the permit requirements to importers.³⁴ In addition, the Swedish government is considering the introduction of a system similar to the German DSD model for the take-back of plastics, paper and packaging.³⁵

vii) The European Commission Packaging Waste Directive

As a result of concerns regarding effects of these new recycling systems on trade, a packaging and packaging waste directive is under consideration within the European Community.³⁶ The Directive is presently before the European Parliament and Commission. Elements of the Directive under consideration include mandatory recovery and recycling targets, including a requirement of 90% by weight diversion of packaging waste from the waste stream within ten years of the implementation of the Directive,³⁷ requirements for the full internalization of external costs, common labelling and reporting requirements, and generalized take-back obligations for producers and importers.³⁸

2) The United States³⁹

Consideration of product stewardship systems is at a very preliminary stage in the United States. A "Manufacturer Responsibility Act" bill has been developed for introduction in the California Legislature, which would require all manufacturers selling in the state to meet a 50% "utilization" rate by 1995. The rate could be met by having post-consumer content, by purchasing tradable credits, or by reusing packages. If the rate is not achieved on each material, companies must pay a fee for materials shortage equal to the cost of recycling the material. The "utilization" rates ratchet up to 80% by 2001. At least a dozen other states have enacted various forms of recycled content legislation, although these statutes are primarily targeted at newsprint and paper.⁴⁰

In addition, the State of Florida has enacted a one-cent Advance Disposal Fee (ADF)⁴¹ on plastic, glass and paper containers. Exemptions are provided from the ADF if minimum recycled content requirements are met, or if the producer guarantees the equivalent diversion rate for its containers. Retailers are expected to begin to collect the ADF on non-exempted containers in October 1993.⁴²

At the federal level, a bill has been developed by United States Senator Max Baucus which is intended to pass the costs of the post-consumer management of products and packaging on to producers.⁴³ In addition, in the spring of 1992 the national Recycling Advisory Council, endorsed the principle that market development policies should encourage the internalization of the costs of recycling and disposal by product manufacturers and waste generators. The Recycling Advisory Council is an independent body established by the National Recycling Coalition with a grant from the U.S. Environmental Protection Agency.⁴⁴

3) New Canadian Proposals

In response to the growing concerns in Ontario regarding the continued viability of the Blue Box system, a number of proposals have been presented to support the system

and to extend the principle of stewardship. These are intended to ensure that the costs of the post-consumer management of products and packaging are at least partially passed back to the producers of products and the users of packaging. A number of other Canadian provinces are considering expanding producer responsibilities for post-consumer materials management, through expanded deposit-return requirements, packaging regulations, and producer support for recycling systems. This, in turn, is leading to concerns within industries which sell into the national market over the possibility of the establishment of different stewardship requirements in each jurisdiction.

i) The Ontario Waste Reduction Advisory Committee's "Shared Model"

In March 1993, the Ontario Waste Reduction Advisory Committee (WRAC) released a revised version of its "shared model" for resources management.⁴⁵ The model assumes that compostable food and yard wastes and industry process wastes will be dealt with through a generator user-pay system. For the management of the dry recyclable waste stream, WRAC proposed a sharing of financial and functional responsibilities between producers and waste generators.

Under the WRAC model, dry recyclables would be collected and sorted by municipalities, at the expense of municipal and provincial taxpayers. The collected materials would then be processed and marketed through a system of Material Reclamation Facilities (MRF's) supported through a producer-financed Industry Funding Organization (IFO). The IFO would charge producers a Variable Unit Charge (VUC) which would reflect the real costs of the post-consumer processing and marketing of their products and packaging. Each municipality would have the options of bidding to operate a MRF for the IFO, operating the MRF jointly with the IFO, or operating the MRF itself and foregoing IFO support.

The WRAC model assumes the establishment of a "backdrop" regulation by the province, possibly in the form of a provincially imposed VUC which exceeds the highest IFO VUC, to ensure that producers participate in an IFO.

ii) The Grocery Products Manufacturers of Canada's Proposal

In December 1992 the Grocery Products Manufacturers of Canada (GPMC) proposed a stewardship model of their own for grocery product packaging.⁴⁶ The model has been subsequently endorsed by the Canadian Council of Grocery Distributors, the Retail Council of Canada, and the United Food and Commercial Workers of Canada. The GPMC model offers to provide financial support to municipalities for Blue Box collection and sorting services. The IFO contribution would cover municipal costs above their avoided waste disposal costs plus provincial contributions, plus revenues from materials sales. This contribution would ensure that it costs municipalities no more to provide Blue Box

services than to provide disposal services for the same materials.

To support the development of markets for secondary materials, the GPMC model proposes rebates to producers for using materials recovered from Canadian recycling programs in their products or packaging. In addition, like the WRAC model, the GPMC proposal assumes the establishment of a backdrop regulation to ensure that producers cannot "free ride" on the recycling system. The GPMC model also requires that existing deposit-return systems not be expanded. The model is intended to provide for a degree of uniformity across Canada in terms of packaging and stewardship requirements.

GPMC and its industry partners are currently involved in discussions regarding its proposals with a number of provinces, including Nova Scotia, British Columbia and Ontario. On July 14, 1993, the Manitoba government announced its agreement in principle to the industry stewardship proposal.⁴⁷ The discussions in Ontario have occurred in cooperation with OMMRI, which hopes to act as the "roll-out" IFO in the province.

4) Developments in Other Provinces

i) Manitoba - The Waste Reduction and Prevention Act

The Manitoba Waste Reduction and Prevention Act (WRAP Act), was proclaimed in August 1991. The Act gives the Manitoba government the authority to assign general responsibilities for waste management to the producers, distributors or vendors. The legislation includes provisions for consultation with affected industries, and the setting and reporting on the achievement of targets. Businesses are encouraged to pursue their own voluntary waste reduction and prevention programs. However, if voluntary programs are not developed, the Act enables the government to establish financial mechanisms, such as deposits, handling fees and pre-disposal fees for the recycling of specific products or materials.⁴⁸ Furthermore, the provincial government can license distributors or prohibit the sale of certain products or materials in the province.⁴⁹

The application of deposits is currently limited to beer containers in Manitoba. However, the Beverage Container and Packaging Regulation introduced in Manitoba in 1992, makes distributors of ready-to-serve beverages responsible for the recovery of their containers.⁵⁰ As of September 1992, distributors of beverages sold in sealed containers, such as metal cans, and glass and plastic bottles, with the exception of dairy products and infant formulas, must be licensed to sell their products in the province. As part of the licensing requirements, distributors are given the option of setting up their own deposit programs or pursuing other waste reduction programs.⁵¹

The province recommends that manufacturers apply for the license themselves. However, if a distributor deals with unlicensed products, it is the distributor's responsibility

to apply for a license. Obtaining a license involves paying a \$100 license fee and submitting the following documentation to the Minister of the Environment: a description of the containers (Notice of Intent); a Waste Reduction and Prevention (WRAP) Plan that describes how the applicant will reduce waste; and how the empty containers will be recovered.⁵²

Once a distributor or manufacturer is licensed, the company must submit sales information regarding the types and number of containers sold in the province. The Regulation includes provisions to ensure the confidentiality of this information. Assessment fees are also due on a monthly basis from licensed distributors. The assessment fee will be \$1 per 1,000 containers sold. These funds are to be used to pay for monitoring of distributors' performance under the regulation. An additional assessment of 1 cent for each container short of the recovery target rate will also be made.⁵³

The Manitoba government announced its agreement in principle to the proposed GPMC/Industry stewardship model in July 1993. However, details of the system to be established in Manitoba have yet to be negotiated between the provincial government and the industry participants.

ii) Nova Scotia - The Recycling Act and The Litter Abatement Act

The 1989 Nova Scotia Recycling Act sets out the provincial government's powers to implement a Resource Recovery Fund.⁵⁴ The Fund was established through the Resource Recovery Fund Regulation of 1991 with a mandate to channel financial assistance to municipalities and other organizations for waste recycling programs. The objective of the Fund is to provide the infrastructure necessary to make recycling a viable option in Nova Scotia.⁵⁵

The Resource Recovery Fund is funded entirely by producers on a voluntary basis. The Department of the Environment initiates negotiations with product manufacturers and distributors regarding contributions. Those who agree to make financial contributions enter into a partnership with the province.⁵⁶ The Resource Recovery Fund is administered by a Board of Directors. Board members include representatives from various industries associated with products designated under the regulation. The Minister may also appoint a municipal representative, a member of the Clean Nova Scotia Foundation and members-at-large to the Board.⁵⁷ As of June 1992, over \$1.5 million had been committed to support recycling programs in Nova Scotia.⁵⁸

The 1990 Beverage Container Regulations made under the Litter Abatement Act of 1989, require that all beverage containers sold in the province be approved by the Minister of the Environment.⁵⁹ The condition of approval is that the packaging is of a type that the recycling program can accept (i.e. PET) and is not of a type which poses recycling difficulties (i.e.: bi-metal cans: cans with a body of steel and a cap of aluminum).

Deposit-return requirements currently apply to refillable soft drink containers and all containers sold through the provincial Liquor Commission System. However, on return, only half the deposit is refunded on non-refillable containers returned through the Commission.⁶⁰

iii) New Brunswick - The Beverage Container Act

The purpose of the New Brunswick Beverage Container Act of May 1991 is to divert beverage containers from the solid waste stream and to encourage the efficient use of resources and energy.⁶¹ In order for a container to be sold in New Brunswick, the Ministry of the Environment must approve plans for the refilling or recycling of containers. Furthermore, it is not sufficient that a container is recyclable; the distributor must ensure that the containers will be recycled.⁶²

Through a modified deposit/refund system, the Act provides an economic incentive to the consumer to choose refillable (reusable) containers over those which are recyclable. The deposit is the same for either refillable or recyclable containers. The consumer, however, receives the full refund only on refillable containers and only 50% of the refund on recyclable containers. The Act also provides the authority to ensure that pricing does not eliminate the incentive to purchase refillable containers.⁶³

The portion of the deposit on recyclable containers which is not refunded is designated an "environmental fee". Distributors are able to use 50% of the Environmental Fee to offset container management expenses. The balance is assigned to the Environmental Trust Fund, where it is allocated to environmental education, administration of the Beverage Containers program and assistance to specific industries to further the objectives of the Act.⁶⁴ Retailers are given the opportunity, but are not obliged, to take back the empty containers. According to the Act, it is the mandate of Redemption Centres to be established by producers to take back empty containers.⁶⁵

iv) Alberta - The Environmental Protection and Enhancement Act and Beverage Container Recycling Regulation.

Deposit-return requirements have been applied to soft drink, juice, bottled water, wine, beer and liquor containers in Alberta since the enactment of the 1972 Litter Act. Manufacturers must register with Alberta Environment and have their containers approved by the province. A system of more than 200 beverage container return depots has been established, in addition to those operated for and by the breweries.

Under the 1972 legislation manufacturers were required to take-back the returned containers. However, they were free to dispose of the containers if they chose to do so. The Beverage Container Recycling Regulation made under the 1992 Environmental

Protection and Enhancement Act, which incorporates the 1972 Litter Act, came into force on September 1, 1993. The regulation requires that manufacturers reuse or recycle returned containers. Handling fees of three to five cents per container are paid by manufacturers to the depot operators.

A curbside multi-material recycling program is operated by the City of Edmonton.

v) British Columbia

The British Columbia government is currently considering the establishment of a network of "Envirocentre" collection depots for recyclables as an alternative to expanding the Blue Box to include more materials, or applying expanded deposit-return requirements to beverage containers. The depots would be one-stop drop-off centres for consumers. Some centres already exist and are operated by non-profit groups. To complete the system, the BC government would negotiate with packaging and container producers to make certain the recovered materials are used. The system will be likely to focus, in the first stage, on higher value returnable items, such as soft drink, wine and liquor containers.⁶⁶ The British Columbia government, through its Partners in Recycling Program, is also seeking to encourage industry to take a cooperative role in the development of recycling infrastructure.⁶⁷

5) Conclusions

The principle that producers must assume responsibilities for the post-consumer management of their products and packaging is gaining increasing acceptance in the industrialized world. This trend is especially clear in Western Europe where the German DSD system has established a pattern which other nations are now following. There is also growing interest in the United States in the concept of establishing producer responsibilities with respect to the costs of the collection and sorting of their products and packaging for reuse or recycling, and regarding the utilization of secondary materials.

For their part, a number of Canadian governments are currently moving to impose more significant requirements on producers for the post-consumer management of their products and packaging. These efforts are presently at a preliminary stage. Consequently, the Ontario government's approach to the stewardship issue will have a major influence on the approach taken by other provinces and, potentially, in the United States as well.

IV. A PRODUCT AND PACKAGING STEWARDSHIP SYSTEM FOR ONTARIO: SYSTEM OVERVIEW

1) System Goals

The stewardship system proposed here seeks to achieve two goals:

- i) to ensure the development and sustainable financing of 3Rs infrastructure in Ontario; and
- ii) to internalize waste management costs and thereby provide incentives to the producers of goods and the users of packaging to reduce waste and to accept responsibilities for the reuse or recycling of their products and packaging.

The achievement of these goals is essential to the establishment of environmentally sustainable patterns of resource use in Ontario.

2) System Scope

The proposed system will initially apply to all consumer packaging, and those consumer products already dealt with through the existing residential Blue Box and deposit-return systems in Ontario. This will include:

Products

- o newspapers;
- o magazines; and
- o telephone books;

Packaging

- o grocery packaging;
- o soft drink containers;
- o beer, wine and liquor containers;
- o other beverage containers (i.e. fruit juice and mineral water);
- o hardware packaging;
- o toy packaging;
- o household cleaning product packaging;
- o cosmetics, toiletries and haircare packaging;
- o pet food packaging;
- o pharmaceutical packaging;
- o soap and detergent packaging;

- o participation in an industry-supported recycling system which, through an IFO would both finance the curbside blue box collection and sorting of IFO members' materials and provide commitments regarding market development and utilization for those materials. Such systems would have targets of a 90% collection rate and a 90% utilization rate.

The diversion targets for waste reduction, reuse or recycling plans would be measured from a 1988 base year⁶⁸ and would have to be achieved within five years of the implementation of the stewardship system. The 90% diversion target reflects the goal currently under consideration within the European Community.

The system structure is intended to ensure that the cost internalization, and material collection and utilization of features of a producer-based system are comparable to those of a deposit-return system, as producers have traditionally proposed curbside multi-material recycling as an alternative to deposit-return requirements. The levy and exemption system would be implemented as part of the province's May 1994 Budget.

V. THE PRODUCER-SUPPORTED REDUCTION, REUSE AND RECYCLING SYSTEM: DETAILED DESCRIPTION

1) The Allocation of Functional and Financial Responsibilities

Municipalities will retain functional responsibility for the collection and sorting of dry recyclables. However, the costs of these activities will be internalized by producers. Municipalities will also retain primary responsibility for marketing the sorted materials. At the same time, producers will make market development and material use commitments as part of their participation in an IFO structure to ensure markets for their materials collected through the system.

Municipalities initially will be required to collect the materials as mandated by the proposed Waste Management Act 3Rs regulation.⁶⁹ Municipalities would also have the option of collecting other items for which there is IFO market development support, or for which municipalities can establish markets independently.

i) The Collection and Sorting of Dry Recyclables

More than 300 Ontario municipalities have established the Blue Box infrastructure necessary to collect and sort residential dry recyclables. Given these existing structures, and the requirements of the proposed Waste Management Act regulations,⁷⁰ municipalities should retain the functional responsibility for the operation and management of the collection and sorting system. This would include curbside collection and the sorting of collected material into materials fractions (i.e. glass, metal, newsprint, plastic, boxboard, old corrugated cardboard (OCC)). Provision should also be made for the collection and sorting of materials from multiple unit dwellings not covered by the Waste Management Act regulations.

Capital costs of new collection and sorting systems, principally for collection trucks, blue boxes, and basic sorting facilities would continue to be shared equally between the IFO, the province and the municipality. This would continue to ensure a majority of public sector equity in the capital assets of the collection and sorting system, and thereby assist in establishing and maintaining clear public control over the system. The public sector capital expenditures on diversion infrastructure could be supported through surcharges on tipping fees at disposal facilities.

Financial responsibility for the collection and sorting of recyclables is currently born almost entirely by the province and municipal governments.⁷¹ There is broad consensus that producers must play a more significant role in the financing of Blue Box services. Two competing principles regarding the manner in which these costs should be reallocated have been presented. The first is the principle of full cost internalization by producers. This is the model employed in the German Green Dot system. Under such a

system, producers would be responsible for the costs of Blue Box recycling services in excess of the revenues received by municipalities from the sale of secondary materials. Given the current average cost of Blue Box collection services of \$180/tonne, current average revenues for the sale of materials of \$30/tonne and the current total of 475,000 tonnes of material collected through the system, full cost internalization would require a producer contribution of approximately \$71 million per year.

The second option, which has been put forward in the GPMC proposal, is that the producers' financial responsibilities be limited to the costs of recycling above the costs to municipalities for the disposal of the same materials. Given the current costs of Blue Box services, the current revenues from material sales, the estimated "hard" costs of residential waste disposal of between \$90 and \$120/tonne, and assuming that the provincial Municipal Recycling Support Program (MRSP) will end as scheduled, this would require a producer contribution of between \$14 million and \$29 million per year.

The full cost internalization approach is more consistent with the polluter pays principle and will provide the strongest incentives to reduce waste generation. This view was endorsed by the Recycling Council of Ontario in 1990.⁷² In addition, producers have traditionally presented curbside recycling as an alternative to deposit-return systems. Consequently, curbside recycling should be expected to result in levels of cost internalization comparable to those provided by deposit-return systems.

For these reasons, responsibility for the costs of the Waste Management Act mandated levels of Blue Box collection and sorting services and services for multiple unit dwellings should be fully internalized by producers through an IFO, for the IFO members' materials, in three stages. This transfer should be completed within three years of the province's 1994 budget. The costs of the collection of non-IFO members' materials would be made up through the use of revenues collected through the backdrop levy. The "exclusive jurisdiction" clauses of Bill 7, the Municipal Statute Law Amendment Act, should be strengthened to further ensure that public control over the residential recycling system.⁷³

Schedule for the Transfer of Financial Responsibilities for Collection and Sorting Costs.

Stage 1: Producer Assumption of 1/3 of Blue Box Operation Costs

During this stage, the existing capital cost funding formula would be extended to the operating costs of the Blue Box system. The producers would assume one third of the operating costs minus revenues immediately. The IFO contribution would be based on a formula of:

IFO members' portion of waste stream x (Operating costs-revenue)

3

Based on an average Blue Box operational cost of \$180⁷⁴ per tonne, average revenues of \$30/tonne⁷⁵ and the total of 475,000 tonnes of materials collected through the system this could require a producer contribution of approximately \$24 million.

Stage 2: Producer Replacement of Provincial Contribution

As the existing five-year provincial MRSP grant system for the Blue Box system expires, the equivalent of the existing provincial contribution of approximately \$60/tonne will be assumed by producers. The IFO contribution will amount to:

2 x IFO portion of waste stream x (Operating costs-revenues)

3

This could raise the producer contribution to approximately \$48 million. Municipalities would retain responsibility for the first third of the net costs of the Blue Box system.

Stage 3: Municipal Collection with Costs Fully Internalized by Producers

In this stage producers would assume responsibility for full costs of residential dry recyclable collection and sorting. The IFO contribution would be based on a formula of:

IFO portion of waste stream x (Operating costs-revenues)

Total producer contribution to the system could be approximately \$71 million per year.

As proposed by the GPMC, the IFO could initially allocate collection and sorting costs to producers through a volume or weight-based VUC. However, different VUC's for the collection and sorting costs should be introduced for different material types to reflect the real costs of their management as quickly as possible.

In each stage the IFO will be required to deal with municipally operated collection and sorting services. A standard for reasonable municipal costs could be established on the basis of regional averages, or a regional formula-based system.

ii) The Marketing of Sorted Dry Recyclables

Municipalities would retain primary responsibility for the marketing of collected materials, as many Ontario municipalities are already involved in marketing activities. Their

jurisdictional capacity in this regard will be established through the enactment of Bill 7.⁷⁶

However, the proposed system will also establish producer responsibilities for the development of markets for recovered materials. A market development/materials utilization plan will be required as part of an acceptable IFO-based waste reduction, reuse or recycling plan. These market development/material utilization plans must ensure the use of the producers' recovered materials by either the producers or by third parties.⁷⁷ These plans should provide for the development of markets for, and utilization of, 90% of producers' materials within a set time frame of not more than five years. It should not be possible for the users of non-reusable or non-recyclable packaging to be members of the IFO and obtain a levy exemption.

Possible models for the implementation of market development/material utilization requirements could include:

- o a DSD style "acceptance" from the producer, or a recycling "guarantor" regarding material use as condition of IFO membership;
- o the establishment of IFO-supported material reclamation facilities (MRF's) as proposed by the Ontario WRAC; or
- o permitting municipalities the option of returning materials to producers in proportion to their original use at the producer's expense.

Under the second and third models, municipalities would forgo revenues from material sales, but should receive a corresponding increase in producer contributions to their collection and sorting costs.

The precise nature and structure of these commitments will have to be developed in consultation with producers, municipalities and the existing processors and users of secondary materials. Material use commitments should be structured in such a way as to permit local, community-based recycling activities to continue and expand. This is especially appropriate in non-urban areas.

The GPMC has proposed that an IFO could provide rebates to participants in its system for using recycled materials in their products. The GPMC has also suggested that funds from IFO levies on producers be employed in research and development efforts to find markets for problem materials. Both options should be pursued by the IFO as part of a market development/material utilization plan.

In the absence of an IFO structure, the province could offer rebates on its recycling levy for secondary material use. Such instruments are widely employed in the United States.⁷⁸ Other market development support measures, including the use of recycled content legislation, would also have to be pursued by the province.⁷⁹

2) Backdrop Mechanisms

The establishment of an effective "backdrop" mechanism is considered essential to the establishment of a successful stewardship system. The purpose of the backdrop is to ensure that all producers and users of packaging contribute to the financing of the stewardship system. Participants in the system must not be placed at an economic disadvantage in relation to those who choose to be "free riders." The absence of an effective backdrop is widely regarded as one of key reasons for the failure of the OMMRI stewardship system.

Six backdrop mechanisms were explored to support a stewardship system in Ontario. These were evaluated in terms of their effectiveness, constitutional validity, feasibility under existing provincial legislation, compliance with international trade law, and acceptability to key stakeholders.

i) Options Considered

a) Bans on the Products of Producers not Participating in the Stewardship System.

The Waste Management Act Amendments to the Environmental Protection Act allow for bans on packaging, disposable products, or products which pose waste management problems. There is also a history of product bans in the province. Regulations 340 and 341 were designed to ban soft drinks not sold in refillable containers. Product bans were proposed by the Recycling Council of Ontario to support participation in OMMRI in 1990.⁸⁰ However, it is not clear if, under the Waste Management Act amendments, bans must be applied to all products of a given type, or if they can be applied on a brand basis. The latter would be necessary to support participation in a stewardship system.

In addition, product bans could lead to international trade law difficulties in terms of the potential unequal treatment of imports. In this sense, bans may violate the most favoured nation rule, fail the unilateralism vs. multilateral environmental policy test, fail the GATT "necessariness" test and fail to qualify for the GATT Article XX exemption. A trade challenge resistant approach may be possible depending upon how products are targeted. Product bans may also be subject to constitutional challenge as involving the extra-provincial regulation of imports.

Finally, product bans may be politically difficult to impose, weakening their credibility as a meaningful threat to back up participation in a stewardship system. The experience with soft drink containers reinforces this concern. Notwithstanding this consideration, they may be an appropriate instrument to address a limited number of problem products or materials which are non-durable, non-reusable and non-recyclable, such as non-reusable and non-recyclable plastic or composite packaging (i.e. bi-metal cans: cans with a body

of steel and a cap of aluminum).

b) Licensing

Under licensing proposals producers would be required to obtain a license from the province to sell a product in its jurisdiction. Under some proposals participation in an IFO, such as OMMRI, would be considered an alternative to obtaining a license. A licensing system is constitutionally valid and is employed in Manitoba's Waste Reduction and Prevention Act and regulation and, in a modified form, in New Brunswick's Beverage Container Act, Nova Scotia's Litter Abatement Act and Alberta's Environmental Protection and Enhancement Act.

The concept of a licensing system appears to have industry support.⁸¹ In addition, a licensing requirement could provide the basis for a provincially-imposed packaging levy.⁸² However, no provisions for licensing of this nature exist under current Ontario legislation. New legislation would be required to implement a licensing system in Ontario. In addition, as is the case with product bans, the structure could be construed as a non-tariff barrier to trade under international trade law.

c) Retailer Collection Requirements

A requirement that retailers take packaging back from consumers and ensure its reuse or recycling is the backdrop to the German DSD system. It has been a highly effective mechanism in encouraging industries to participate in the DSD system. German retailers are reported to be increasingly unwilling to stock products without the Green Dot label.⁸³

Retailer take-back requirements are feasible under section 176 of the Environmental Protection Act as amended by the Waste Management Act. However, there are no provisions which would permit the province to require that the vendor take responsibility for reusing or recycling the product. The mechanism might be effective in combination with high disposal fees or a deposit-refund system. It should be noted that Canadian retailers and consumer products manufacturers object very strongly to retailer-take back proposals.⁸⁴ The German system has also been the subject of complaints to the effect that it constitutes a non-tariff barrier to trade.⁸⁵

d) Deposit-Return Requirements

Deposit-return systems are a familiar option, which have high return rates when employed, and follow the "polluter pay" principle. The costs of reuse are internalized by the producer. As noted earlier, the province has the authority to require deposit return

system for products which pose waste management problems through the Waste Management Act amendments to the Environmental Protection Act.

As we have proposed, deposit-return systems are a practical option for some types of products and containers. However, deposit-return requirements cannot practically be applied to the entire waste stream on an ongoing basis. It is also unclear if the Waste Management Act "waste management problem" provisions can be applied to particular brands of products as opposed to classes of products. Application on a brand basis may be necessary for deposit-return requirements to function as a backdrop for a stewardship system.

e) Labelling

The province has the regulatory authority under the Environmental Protection Act to implement either positive or negative labelling schemes. These could be employed to indicate participation or non-participation in a stewardship system. In addition, a label could be employed as a requirement of sale. This can be achieved through the new regulatory provisions regarding product bans.

Labels provide immediate indications to consumers whether the product is in the stewardship system and are not costly to implement. However, negative labels would likely be interpreted as constituting violations of the GATT Article III "National Treatment" and Article IX "Marks of Origin" requirements. On the basis of the September 1991 GATT Tuna-Dolphin decision,⁸⁶ positive labels (e.g. "Dolphin Safe") appear to be GATT acceptable.

Although labels provide an important means of communicating information to consumers, in themselves, they are unlikely to provide an adequate incentive to producers to participate in a producer-supported recycling system. To be effective labelling would have to be employed in combination with other, more coercive, backdrop instruments.

f) Variable Unit Charges

The application of a VUC by the province to "free riders" was proposed by the WRAC in its November 1992 proposals. Such a provision exists under the Manitoba Waste Reduction and Prevention Act to support reuse and recycling performance requirements. A unit charge may be possible under the Ontario Waste Management Act.⁸⁷ A unit charge as a backdrop to a stewardship system has the advantage of ensuring that if an IFO is unable to meet its commitments, the revenues necessary to support the recycling system will still be available to the province, and through the province, to municipalities.

In the event that a unit charge is not possible under the Ontario Waste Management Act, a charge could be imposed through an amendment to the Retail Sales Tax Act or through the omnibus budget legislation under the Financial Administration Act. A charge imposed at the point of sale would be constitutionally valid as a direct tax. This would follow the models of the province's now withdrawn tire tax and the "feebate" tax on gas guzzling vehicles.

Unfortunately, the imposition of a direct charge at the point of sale on a broad range of goods would be administratively difficult and impose a substantial burden on retailers. Indeed, the charge could only practically be imposed as a percentage of purchase price or as a flat rate per unit purchased (i.e. 1 cent per container or package). A weight- or volume-based charge, or a "real-cost" charge, would be impossible to administer. The charge could be incorporated into the purchase price of the good by the retailer, as is the case with the Ontario Non-Refillable Container Tax charged on non-refillable beer containers, although this would still impose significant difficulties on store owners.

It is generally felt, for these reasons, that it would be preferable to impose such a charge at the brand owner or import distributor level. A charge at this level clearly would not be a direct tax. However, it may be valid through a number of other provincial heads of power. Charges as components of provincial licensing systems are constitutionally permissible,⁸⁸ as are charges for services provided by the province. In addition, regulatory charges are constitutionally justified if made in relation to some other provincial power. With respect to waste management and recycling, the relevant powers would include provincial jurisdiction over municipal institutions,⁸⁹ and local works and undertakings.⁹⁰

Under such circumstances constitutional scholars hold that it is no objection that a charge is indirect.⁹¹ This is especially true if a charge is employed to defray specific expenses rather than to raise general revenue. Even if a charge proves too high and produces a surplus of revenue which is available for general purposes, a charge may still not be characterized as a tax so long as the courts are satisfied that it is not a colourable attempt to levy indirect taxation.⁹²

Waste charges on domestic products are permitted under the GATT. In addition, Article XX(g) of the GATT could justify imposing charges on imported products that are equivalent to a waste tax on domestic producers of like products. A waste charge would provide producers with incentives to adopt more efficient production processes and hence less waste. Therefore such charges would be related to the "conservation of natural resources." In addition, with everything else being equal, a waste charge will increase the costs of domestic producers. As a result they could lose market share to foreign producers not subject to the charge. These would partially or completely frustrate the ability of a government to use waste charges to conserve natural resources. Therefore a charge on imports may be GATT valid.⁹³

This conclusion would appear to be reinforced by the GATT Superfund decision⁹⁴ and the recent Canada-U.S Agreement regarding the application of Ontario's environmental levy to imported non-refillable beer containers.⁹⁵ A slightly lower levy in order to deal with the infrastructural obstacles which foreign firms might face could be proposed to strengthen GATT compatibility.

ii) Preferred Backdrop Structure

After considering the available options, we have chosen to propose the employment of a combination of mechanisms for a backdrop. The core element will be the imposition of a "packaging" or "waste management levy" on the range of products, packaging or materials to be captured by the stewardship system. Items will be exempted from the levy on the basis of being subject to a mandatory deposit-return requirement, or the presentation by the brand owner or distributor of an acceptable waste reduction, reuse or recycling plan. Such plans might include:

- o the elimination of 90% of the designated packaging or materials, through such mechanisms as the use of bulk sales formats at the retail level;
- o the development of a deposit-return system in cooperation with retailers, with a recovery rate of 90%;
- o the establishment of a self-operated retail or depot-based reuse or recycling system, such as that operated by the Ontario Brewers' Retail, with a recovery rate of 90%; or
- o participation in an IFO-based recycling system to finance the Blue Box collection of designated IFO-member generated materials, and which includes commitments to ensure secondary material use. Such systems would have targets of a 90% collection rate and a 90% utilization rate.

The diversion targets for waste reduction, reuse or recycling plans would be measured from a 1988 base year and would have to be achieved within five years of the implementation of the stewardship system.

Reduction, reuse or recycling plans could be integrated with the requirements of the 3Rs regulations to be made under the Waste Management Act regarding packaging audits and packaging reduction work plans by large food and beverage manufacturing establishments, paper manufacturing establishments, chemical manufacturing establishments, and importers.

Exemptions from the charge would be accompanied by a positive label.

province of Ontario each year,⁹⁷ With the current total Blue Box system cost of \$100 million, when spread across the full range of consumer sales packaging, the backdrop levy amounts to an average of just under one cent per unit of packaging sold. The charge on newspapers would be slightly higher, due to large proportion of the waste stream made up by newsprint (Box 2).

BOX 2 : Newspaper Levy

Newspapers currently are currently estimated to constitute approximately 25% by weight of the residential waste stream⁹⁸ and approximately 7% by total number of units of sales packaging and affected products sold in Ontario each year.⁹⁹

A total of 832 million newspapers were sold in Ontario in 1991-92 and used newsprint is currently valued a approximately \$40/tonne.¹⁰⁰

With a total system cost of \$100M the backdrop levy would average 1.8 cents per newspaper sold.

Given these estimates, it is possible to conclude that the primary economic impact of the charge will be at the brand owner or distributor, rather than consumer, level. Consequently, the social impacts of the levy should be minimal.

3) Backdrop Levy Revenue Commitments and Alternative System Structures

The levy revenues would be committed to a number of specific purposes. These would include:

- o reimbursing retailers for administration and space costs of the mandatory and "optional" deposit-return elements of the system on the basis of the number of units or volume of materials handled;
- o government administration of the levy, including monitoring system costs;
- o municipal 3Rs infrastructure development; and
- o 3Rs technology development support.

The bulk of the revenue from the levy would be employed to directly support the operation of the Blue Box recycling system in two ways.

Option 1 - Assumes IFO Establishment

This is the preferred option. Under this structure the IFO would calculate and charge a levy to its members based on the real costs of the collection and sorting of their materials through the municipal recycling system. Municipalities would collect and sort materials, and would receive funding on a reasonable costs - revenues basis. The IFO would provide a contribution in proportion to its members' contribution to the dry recyclable stream. The costs of the collection and sorting of the remainder of the stream (non-IFO members' and otherwise non-exempted brand and distributors' materials) would be financed through provincial support to municipalities using the backdrop levy revenues.

Option 2 - Assumes No IFO Established

This is a fall-back structure to be employed in the event that a satisfactory and functioning IFO cannot be established. Under this system exemptions would only be granted for materials subject to mandatory deposit-return requirements or for which producers have developed self-contained reduction, reuse or recycling plans. The province would provide municipalities with support for dry recyclable collection and sorting on the basis of a reasonable costs-revenues formula using levy revenues.

A tax credit or levy rebate might be provided for the use of secondary materials. In the absence of IFO commitments regarding material use, other provincial measures to support markets will have to be implemented. This might include:

- o recycled content requirements;
- o bans on the use of non-reusable and non-recyclable packaging types; and
- o the application of deposit-return requirements to all beverage containers.

4) Accountability Structures

IFO members would be required to meet secondary material use requirements as part of the IFO's exemption plan. Failure to meet these targets would result in the withdrawal of exemptions from the environmental levy. A performance monitoring structure, perhaps along the lines of those provided for the DSD system through the Technical Inspection Agencies (TÜV) should be established. These would include representatives of producers, the province, municipalities and non-governmental organizations. The monitoring system would also review the operation of self-operated reduction, reuse and recycling systems for which levy exemptions are granted.

The export of collected recyclables for disposal would be prohibited for either self-contained systems or municipally-operated, IFO-supported systems. Exports as feedstocks for legitimate industries would be allowed. The use of recovered materials for energy-from-waste purposes would continue to be prohibited.

VI. SUPPORTING POLICY MEASURES

The proposed system assumes a number of policy measures to support its implementation and operation. Many of these steps were outlined in CIELAP's March 1993 9-Point Action Plan for Municipal Solid Waste Diversion in Ontario.

1) Vigorous Enforcement of the Existing Deposit-Return Requirements for Beverage Containers

The province's requirements regarding the sale of soft drink containers in refillable containers were reduced from 75% to 30% of sales in 1986 as part of the arrangement to establish the Blue Box system. Strong evidence exists that these requirements have not been met by soft drink manufacturers for some time.¹⁰¹ The 30% requirement should be enforced vigorously by the province.

2) Full-Cost Disposal Pricing

High tipping fees at landfills have been widely demonstrated to be a very effective means of providing incentives to Industrial-Commercial and Institutional (IC&I) sector waste generators to reduce, reuse or recycle their wastes by making the 3Rs a less expensive option than disposal. However, low tipping fees at competing facilities have undermined the efforts of some municipalities to employ high disposal fees to promote the 3Rs. Tipping fee differentials have also encouraged the movement of waste around the province.

The province currently encourages municipalities to charge full tipping fees at their landfills. In response to the province's March 1993 Waste Management Powers Discussion Paper¹⁰² CIELAP proposed that the provincial government establish and implement a formula-based system for setting a minimum tipping fee for waste disposal, applying to public and private landfills, for each municipality in the province. This formula should include capital, operational, planning and post-closure care costs. In addition, there should be allowances for the creation of contingency funds against unanticipated environmental damage and to address the rehabilitation of abandoned disposal sites which are sources of environmental problems. Surcharges could also be made to provide capital funding for diversion infrastructure. The possibility of employing regionally-based formulas, to take into account the broad variations in municipal organization which exist between the major regions of the province was proposed as part of this approach.¹⁰³

This proposal would have required new regulatory powers on the part of the province, as the province has delegated control over disposal pricing at publicly operated landfills

through the Municipal Act, the Regional Municipalities Act and fourteen other similar pieces of legislation. We note that, unfortunately, the legislation resulting from the Waste Management Powers Discussion Paper, introduced on April 28, 1993 Bill 7 (An Act to Amend Certain Acts Related to Municipalities Concerning Waste Management), makes no provisions of this nature.

As an alternative to a regulatory approach, the province might consider either the addition of a condition of full cost pricing to municipal-provincial cost sharing arrangements for waste management services. Another option would be to impose a disposal levy as a budget measure to ensure a reasonably high province-wide tip fee. This would apply to public and private landfills. The revenues could be dedicated to environmental or 3Rs purposes, particularly the capitalization of diversion infrastructure. Charges of this nature are under consideration by the British Columbia government as part of its Waste Discharge Fee Permit System under its Waste Management Act.¹⁰⁴

3) Waste Export Ban

The efforts of some Ontario municipalities to employ high tip fees to promote waste diversion have been undermined by the growing practice of the export of IC&I wastes to the United States. In addition, the practice of waste export deals with the environmental costs of consumption by transferring them to other communities. It does not deal with the fundamental questions underlying waste generation and management. It is therefore no solution to the waste management crisis. Consequently, the province should work with the federal government and U.S. federal and state governments to curtail the export of solid waste to the United States.¹⁰⁵

4) Residential User-Pay for Residuals and Wet Wastes

At present residential waste management services are paid for through property tax assessments, in combination, in some jurisdictions, with tipping fees for IC&I sector wastes. This system provides households with no incentives to engage in 3Rs and composting activities, as the assessments do not vary with the amount of waste generated. Collection charges for household waste disposal are now widely employed in Europe and the United States, and the approach has been adopted by a small number of municipalities in Ontario.

The experiences of these jurisdictions indicates that user-pay systems produce cost savings, reduce garbage generation rates and increase participation in recycling programs. They also appear to have a significant influence on citizen buying decisions and behaviour.

Ontario municipalities should move towards a full-cost user-pay model for residential

wet wastes and residuals. This is especially true in urban areas. Waste management costs should be removed from property tax assessments as part of this transition. In this context, we welcome the provisions of Bill 7 which would enable municipalities to establish full-cost user-pay systems for waste collection and management.

5) Resource Pricing and Marketing Recyclables

i) Resource Pricing

The establishment of markets for materials recovered through recycling programs remains a serious challenge. The lower price of virgin source materials presents the greatest challenge to the development of markets for recovered materials. This is often the result of direct and indirect state subsidies for resource extraction, and the failure to account for the environmental costs associated with resource development. This issue will require long-term reforms to resource development policies to be fully addressed.

To address this question the province should develop a full-cost accounting system which recognizes resource depletion, subsidies and environmental costs in natural resource extraction activities. In the long-term this will provide the basis for more sound resource management decisions and will be essential for the formation of an economic system which is environmentally and economically sustainable.

ii) Marketing Recyclables

In the short term, there are a number of measures which might be employed to stabilize and expand markets for recovered materials. These include:

a) Government Purchasing

Government purchasing comprises a significant portion of the Canadian economy. Therefore, government purchasing can exert a substantial influence on the market place, generating a significant demand for recovered materials. Provincial government purchasing agents should be required to include waste management costs in purchasing contract specifications (this can operate as a simple price preference for materials with recycled content and services which are delivered in a manner which minimizes waste generation). The same approach should be employed by municipalities and the federal government. Mandatory targets for government purchases of products with recycled content should also be set.

b) Labelling

Labelling can be a major element of a consumer education program intended to promote the use of products with recycled content. Labelling regarding "post-consumer" content is particularly important in this regard. Clear and enforceable standards for the use of the term "recycled" in labelling related to post-consumer content levels should be established. This activity might be undertaken in conjunction with the federal government's Environmental Choice (Ecologo) Program.

c) Non-Reusable, Non-Recyclable Packaging Material Bans

Bans of this nature could be introduced under the Waste Management Act against specific materials which cannot be reused or recycled. Composite packaging, such as bi-metal cans, or non-recyclable plastics, would be early candidates for such bans.

Additional Measures to be considered in Absence of IFO-Material Use Commitments:

d) Secondary Material Use Tax Credits

A number of tax measures might be employed to support markets for secondary materials in the absence of, or to supplement an IFO market development plan. Secondary materials might be exempted from the provincial sales tax. Alternatively, a consumption tax credit would allow a company to receive credit for a portion of the price paid for using waste materials. Such credits are designed to offset the price advantage of virgin materials. Rebates could also be provided for secondary material use. The amount of the rebate would be based on the company's use of secondary materials in manufacturing.¹⁰⁶

e) Recycled Content Legislation

Laws requiring industry to use recycled materials in manufacturing, have been employed by thirteen U.S. states to stimulate demand for secondary materials, particularly newsprint. This type of legislation can be employed in lieu of, or in addition to, voluntary agreements with industry. The province may need to consider the use of recycled content legislation as a backup to efforts to establish markets for recovered materials. This would be particularly true in the absence of an IFO which would make market development commitments as part of its recycling plan.

6) Community-Based Diversion Projects

Community based waste diversion projects have often proved to be highly efficient

and effective. They put the principle of community responsibility for waste management into direct action. Small-scale projects with strong community support are also less likely to prompt as much resistance in the approvals process than is the case with large scale, centralized undertakings.

Consequently, the provincial government and municipalities should continue and expand their support for local community-based diversion projects, such as community composting, and waste exchanges and resource centres.

7) 3Rs Technology and Industry Development and Support

Technical assistance and technology development support have been identified as critical to the establishment of viable recycling industries by a wide range of sectors. The Ministry of the Environment's existing 3Rs technology support programs should be continued and expanded. Greater emphasis should be placed on source reduction technologies than has been the case in the past. Revenues from the "backdrop levy" and landfill tipping fees could be applied to support research and development activities. Efforts to assist in the capitalization of emerging 3Rs services firms should also be strengthened.

VII. CONCLUSIONS

Ontario's Blue Box system, although enormously popular with Ontarians, is in serious financial trouble and its future is in doubt. In addition, the current system does not meet the goals of cost internalization and materials utilization, essential to promoting waste reduction, reuse and recycling.

Action is needed now to ensure the continued development and support of waste reduction, reuse and recycling infrastructure in Ontario and to provide incentives to producers to reduce, reuse or recycle the wastes associated with their products and packaging. In this context, cost internalization, and the assumption of producer responsibilities for material utilization, is clearly a growing trend around the world.

The proposal which we have made here builds upon the existing 3Rs system in Ontario, while incorporating elements of new Canadian proposals and of systems already in place elsewhere. In addition, the system which we have proposed is sufficiently flexible so as to be able to accommodate and incorporate existing reuse or recycling obligations, such as deposit-return requirements. Consequently it could be adopted by other provinces, in addition to Ontario. In sum it presents a feasible and practical response to the problem of reuse and recycling system financing and support, and will begin to move our society towards environmentally sustainable patterns of resource use.

ENDNOTES

1. The Blue Box program won an award from the United Nations Environment Program in 1989.
2. "Three Millionth Blue Box," The Globe and Mail, December 7, 1992.
3. Personal Communications, OMMRI Staff to Greg Jenish, CIELAP Researcher, July 1993.
4. J. Rusk, "Blue Box Program Faces Cutbacks: North York, Durham seek measures to reduce cost of recycling service," The Globe and Mail, June 1, 1993.
5. Metropolitan Toronto Department of Public Works: 1991 Annual Report (Toronto: Metropolitan Toronto, 1991), p. 19.
6. The full cost (planning, capital and operational) of landfilling wastes has been estimated at \$50-\$60/tonne (VHB Research and Consulting Inc. and Maclaren Engineers Inc., Cost Accounting Methods for Landfill (Hamilton: Ontario Waste Reduction Advisory Committee, 1991)). The full cost of the curbside collection of wastes in urban areas has been estimated at \$50-\$55/tonne (Personal Communication Wes Finter, Director of Waste Management, City of Etobicoke, to Greg Jenish, Researcher, Canadian Institute for Environmental Law and Policy, June 25, 1993, giving an average of \$100-\$115/tonne. Some municipalities have cited disposal costs of as low as \$90 tonne (see for example, P. Gorrie, "Bumpy road for blue boxes," The Toronto Star, April 26, 1992). The costs of the operation of transfer stations may not be fully reflected in these estimates. Furthermore, none of these estimates fully address the environmental and social externalities associated with waste disposal.
7. For a history of the development of the Blue Box system in Ontario see M. Winfield, ed., Looking Back and Looking Ahead: Municipal Solid Waste Management Policy in Ontario from the 1983 Blueprint to 50% Diversion in 2000 (Toronto: Canadian Institute for Environmental Law and Policy, 1993), pp. 3-6.
8. This estimate is based on the total of 475,000 tonnes of materials collected through the Blue Box System in 1991-92 and, a total of \$14 million in revenues from materials sales for the same year (Figures provided by R. Breeze, Manager, Policy and Planning, Waste Reduction Office, Ontario Ministry of the Environment, at the Canadian Institute for Environmental Law and Policy Ontario Municipal Solid Waste Management Policy Conference, January 23, 1993).

9. This definition is based on that used by the Ontario Waste Reduction Advisory Committee. Waste Reduction Advisory Committee, Resources Stewardship in Ontario: A Shared Responsibility (Toronto: Ontario Ministry of the Environment, November 1992), p. 22.

10. These figures were provided for 1991-92 by Bob Breeze, Manager, Policy and Planning, Waste Reduction Office, Ontario Ministry of the Environment at CIELAP's January 1993 Conference.

11. Ibid.

12. Organization for Economic Cooperation and Development, Economic Instruments for Environmental Protection (Paris: OECD, 1989), p. 83.

13. See D. Macdonald, The Politics of Pollution: Why Canadians are Failing their Environment (Toronto: McClelland & Stewart Inc., 1991), p. 208.

14. As of April 1992, OMMRI was \$3 million dollars behind in its financial commitments to municipalities for Blue Box system capital costs.

15. Personal Communication, OMMRI staff to Paula Vopni, CIELAP Research Associate, May 1993.

16. Cairncross, F., "How Europe's Companies Re-position to Recycle" Harvard Business Review March-April 1992.

17. Environment Watch: Western Europe, May 7, 1993, p.6.

18. Refer to Appendix II for a detailed description of the DSD system.

19. Ordinance on the Avoidance of Packaging Waste - Verpackungsverordnung (Bonn: German Federal Ministry of the Environment, June 12, 1991).

20. Personal Communication, J. McInnis, President Recycling Development Corporation, April 16, 1993.

21. T. Paterson, "Clean Europe sinks under piles of trash," The European, July 208, 1993. pg. 1.

22. Environment Watch: Western Europe, 1993 Supplement "Waste Tops the Agenda at French-German Environment Meeting", p.1.

23. Environment Watch: Western Europe, 16 April 1993, p.7.

24. Ibid., 19 March 1993, p.6.

25. Ibid.

26. Ibid., February 5, 1993, p. 5.

27. Ibid., December 18, 1992, pp. 1-2.

28. State Recycling Laws Update, Vol. 2, No. 3, August 1993, pp. 14-15.

29. Ibid., 7 May 1993, p.6.

30. Ibid., 22 Jan 1993, p.4.

31. Ibid., 18 Dec. 1992, pp. 8-9.

32. Ibid.

33. Ibid., 5 Feb 1993, p.5.

34. Press Release, "Ecocycle Bill Ready," Ministry of and Natural Resources of Sweden, 25 February 1993, pp. 1-3.

35. Environment Watch: Western Europe December 18, 1992. p. 8.

36. COM(92)278.

37. As the proposed Directive is currently drafted (Article 4: Targets) this would include a 60% recycling requirement. The degree to which energy-from-waste should be permitted to be counted towards waste diversion is an ongoing debate within the European Parliament and Community.

38. "Environment Committee Proposes Packing Amendments to European Parliament," Environment Watch: Western Europe, June 4, 1993, pp. 2-3.

39. For detailed discussions of options under consideration in the United States see Appendix III.

40. J. Glenn, "The State of Garbage in America," Biocycle, May 1992, p. 30.

41. HB 461.

42. State Recycling Laws Update, Vol.2, No. 3., August 1993, p. 1.

43. As of August 1993 inquiries regarding this Bill by CIELAP and the Recycling Council of Ontario had not been responded to by Sen. Baccus' office.

44. Reported in Resource Recycling, Vol. 12, No. 6., June 1993, p. 18.

45. Waste Reduction Advisory Committee Resource Stewardship in Ontario: A Shared Model (Toronto: Ontario Ministry of the Environment, November 1992).

46. Grocery Products Manufacturers of Canada, Packaging Stewardship Model Discussion Document (Toronto: Grocery Products Manufacturers of Canada, 1992).

47. Government of Manitoba, Press Release, "Province Wide Recycling Initiative Announced," July 14, 1993.

48. Manitoba Environment, Waste Reduction and Prevention Branch, WRAP, Strategy Report, March 1991, p.7.

49. Manitoba Environment, Waste Reduction and Prevention Branch, WRAP Update, December 1992, p.1.

50. Ibid.

51. Ibid., p.3.

52. Manitoba Environment, Guide to Filing Requirements for Manufacturers and Distributors under the Beverage Container and Packaging Regulation of the Waste Reduction and Prevention Act, August 1992, p.1.

53. Manitoba Environment, Waste Reduction and Prevention Branch, WRAP Beverage Container and Packaging Regulation Discussion Paper and Draft Regulation, March 1992, p.8.

54. Nova Scotia Recovery Fund Support for Recycling in Nova Scotia, An Overview, 93/04/11

55. Nova Scotia Department of the Environment, Annual Report Nova Scotia Resource Recovery Fund 01 January 1992 - 31 December 1992, p.2.

56. Ibid., p.4.

57. Province of Nova Scotia, Resource Recovery Fund Regulation, April 7, 1992, p.2.

58. Nova Scotia Department of the Environment, Annual Report: Nova Scotia Resource Recovery Fund 01 January 1992 - 31 December 1992, Accolades p.5

59. Beverage Container Regulation, N.S. Reg. 246/90 as Amended by N.S. Reg. 110/92, s. 6.

60. Personal Communication, Mike LeBlanc, Nova Scotia Department of the Environment, to Greg Jenish, Researcher, CIELAP, August 18, 1993.

61. New Brunswick, Beverage Container Legislation Summary, p.1.

62. Ibid.

63. Ibid., p.2.

64. Ibid.

65. Ibid., p.3.

66. Personal Communication, Ron Drieger, Director, Municipal Waste Reduction Branch, B.C. Environment, to Greg Jenish, Researcher, Canadian Institute for Environmental Law and Policy, June 30, 1993.

67. See generally, Municipal Waste Reduction Branch, Program for Participation: How British Columbia is Managing its Solid Waste (Victoria: BC Environment, February 1993).

68. Packaging waste generation data is available for this year through the National Packaging Protocol (NAPP) process.

69. 3Rs Regulations - Unofficial Draft Recycling and Composting of Municipal Waste, Part II - Blue Box Waste Management Systems.

70. Ibid.

71. For the 1991-92 fiscal year municipalities paid 60% of the system costs, the province 22%, producers through OMMRI and OMMRI II 4%. Material sales accounted for 14% of system costs. Bob Breeze, Manager, Policy and Planning, Waste Reduction Office, Ontario Ministry of the Environment and Energy, comments to CIELAP Ontario Solid Waste Management Policy Conference, January 23, 1993.

72. Discussion Paper: Who Should Pay for Recycling? (Toronto: Recycling Council of Ontario, 1990), p. 7.

73. Z. Makuch, A. Mitchell, and M. Winfield, "Presentation to the Standing Committee on General Government (Ontario Legislature) regarding Bill 7, The Municipal Statute Law Amendment Act," July 8, 1993" (Toronto: Canadian Institute for Environmental Law and Policy and the Canadian Environmental Law Association, 1993).

74. Personal Communication, Brad Guglietti, Waste Reduction Office, Ontario Ministry of the Environment and Energy, to Mark Winfield, Director of Research, CIELAP, May 1993.

75. This estimate is based on Waste Reduction Office's figure of \$14 million in revenues from material sales in 1991-92 and OMMRI's estimate of 475,000 tonnes of materials collected through the Blue Box system.

76. See Bill 7 - An Act to amend certain Acts related to Municipalities Concerning Waste Management, s. 1 amending section 208.3(1)(c) of The Municipal Act.

77. The concept of transferable recycling credits may provide a flexible means of meeting these requirements. For a discussion of this concept see, B. Leith, Financing Waste Management Systems and Programs (Guelph: Waste Caucus, Ontario Environment Network, December 1992).

78. See M. Winfield, et. al., Looking Back and Looking Ahead: Municipal Solid Waste Management Policy in Ontario From the 1983 Blueprint to 50% Diversion in 2000- Conference Background Paper (Toronto: Canadian Institute for Environmental Law and Policy, 1993), pp. 25-26.

79. Ibid, generally pp. 23-35.

80. RCO Discussion Paper: Who Should Pay for Recycling?, p.7.

81. GPMC Packaging Stewardship Model: Discussion Document, Personal Communications, GPMC and OMMRI staff.

82. P. Hogg, Constitutional Law of Canada (Toronto: Carswell, 1992), p. 738.

83. A. Zink, Director of Policy Development, Department of the Environment, Baden-Wurttemberg, at Ontario Ministry of the Environment workshop on the Use of Economic Instruments in Environmental Policy, September 1992.

84. See, for example, Grocery Products Manufactures of Canada Draft Principles for Packaging Stewardship (Toronto: Grocery Products Manufactures' of Canada, March 1993).

85. See for example, "Waste and the Environment," The Economist May 29th 1993.

86. U.S. -- Restrictions on Imports of Tuna, GATT Doc. DS21/R, September 3, 1991.

87. It may be possible to construe sections 176 (4)(d), (7)(b)(1), 7(e)(iii.1), (7)(g)(1) and 7(1) of the 1992 Waste Management Act amendments to the Environmental Protection Act as providing the basis for a levy.

88. The Constitution Act s.92(9).

89. Ibid., s. 92(8).

90. Ibid s.92(10)

91. Hogg, The Constitutional Law of Canada, pp. 749-750.

92. Ibid., p. 750.

93. Personal communications, J. Gibbons, Senior Economic Advisor, Canadian Institute for Environmental Law and Policy.

94. Report by the Panel, United States - Taxes on Petroleum and Certain Imported Substances L/6175, June 5, 1987.

95. See J. Saunders and C. Mahood, "Deal means cheaper beer," The Globe and Mail August 6, 1993.

96. WRAC, Resource Stewardship in Ontario, p. 30.

97. This estimate is based on extrapolations from the German experience. DSD has estimated that approximately 90 billion units of sales packaging are sold in Germany each year. With a total German population this amounts to approximately 1,100 units of packaging per person per year. Ontario's population is currently estimated at ten million. This gives a total of eleven billion units of sales packaging per year.

98. This estimate is based on the estimates provided for 1987 in Waste Reduction Office, Ontario's Waste Reduction Action Plan: Background (Toronto: Ontario Ministry of the Environment, February 1991).

99. This estimate is based on the estimates of the total number of sales packaging units sold in Ontario (11 billion) each year and the total number of newspapers sold in Ontario each year (832 million) (Personal communication, Canadian Daily Newspaper Association, to Greg Jenish, Researcher, CIELAP, June, 1993).

100. Personal Communication, Duncan Barry, Manager, Waste Diversion, Regional Municipality of Ottawa Carleton, to Mark Winfield, Director of Research, CIELAP, July 22, 1993.

101. Ministry of the Environment, Waste Management Branch data obtained by the Canadian Environmental Law Association through Freedom of Information Requests indicates that in July 1989, 84 of 93 firms did not meet the 30% requirement for that month. 27 of 983 firms were at less than one-half the 30% requirement. March 1991 data indicates 7 of 14 firms did not meet the 30% requirement for that month. 4 firms were at less than one-half the 30% requirement. Soft Drink Container Regulations Monthly Ratio Reports, Waste Management Branch, Ontario Ministry of the Environment.

102. Municipal Waste Management Powers in Ontario (Toronto: Ontario Ministry of Municipal Affairs and Ministry of the Environment, 1992).

103. See Winfield, M., Comments on Municipal Waste Management Powers in Ontario (Toronto: Canadian Institute for Environmental Law and Policy, June 1992) for a detailed presentation of this proposal.

104. Evaluation, Economics and Laboratory Services Branch, Revising British Columbia's Waste Discharge Permit Fee System: A Discussion Paper (Victoria: Ministry of Environment Lands and Parks, 1992), pp. 36-37.

105. For a detailed discussion of this issue, see Z. Makuch, "Canadians Dump on Good Neighbour Principle by Exporting Garbage," The Intervenor, Vol. 18, No. 2., March/April 1993.

106. Schrader, R. Creating Markets: The Next Step For State Recycling Programs (Washington, D.C.: Center for Policy Alternatives. Washington, DC. January 1991). pg. 26.

GLOSSARY OF ACRONYMS

ADF	-	Advanced Disposal Fee
CELA	-	Canadian Environmental Law Association
CEOE	-	Federation of Spanish Business Organizations
CIELAP	-	Canadian Institute for Environmental Law and Policy
DM	-	Deutsch Mark
DSD	-	Duales System Deutschland
EEC	-	European Economic Community
EPA	-	Environmental Protection Act (Ontario)
EPA	-	Environmental Protection Agency (US)
FB	-	Belgian Franc
GATT	-	General Agreement on Tariffs and Trade
GPMC	-	Grocery Products Manufacturers of Canada
IC&I	-	Institutional, Commercial & Industrial
IFO	-	Industry Funding Organization
MRF	-	Material Reclamation Facility
MRSP	-	Municipal Recycling Support Program (Ontario)
MSW	-	Municipal Solid Waste
NAPP	-	National Packaging Protocol (Canada)
OCC	-	Old Corrugated Cardboard
OECD	-	Organization for Economic Cooperation and Development
OEN	-	Ontario Environmental Network
OMMRI	-	Ontario Multi-Material Recycling Incorporated
RAC	-	Recycling Action Council (United States)
RCO	-	Recycling Council of Ontario
TÜV	-	Technical Inspection Agencies (Germany)
VAT	-	Value Added Tax

- VROM - Ministry of Housing (Netherlands)
VUC - Variable Unit Charge
WRAC - Waste Reduction Advisory Committee (Ontario)
WRAP - Waste Reduction and Prevention Act (Manitoba)
WRO - Waste Reduction Office (Ontario)

APPENDIX I : Legal Texts

ENVIRONMENTAL PROTECTION ACT

O. Reg. XXX/93

DEPOSITS AND FEES ON DISPOSABLE PRODUCTS, PRODUCTS POSING WASTE MANAGEMENT PROBLEMS, MATERIALS AND PACKAGING

1. In this Regulation.

"disposable product" includes those products listed in Schedule 1 of this Regulation.

"distributor" includes distributors in the mail order business.

"material" includes glass, aluminum, newsprint, steel, wood, polyethylene terephthalate, corrugated cardboard and fine paper.

"Minister" means the Minister of Environment and Energy.

"packaging" includes a material or item that is used to protect, contain or transport a commodity or product or that is physically attached to a product or its container for the purpose of marketing the product or communicating information about the product. It also includes those packages listed in Schedule 2 of this Regulation.

"product posing a waste management problem" includes those products listed in Schedule 2 of this Regulation.

2. No person shall stock, display, offer for sale or sell a product which falls into any of the categories listed in Schedule 1 of this Regulation on or after the 1st day of January, 1994, unless it has the following clearly marked message:

" MONEY BACK DEPOSIT "

3.-(1) In fulfilling their responsibilities to reduce or eliminate waste consumers shall pay deposits to retail vendors on the products listed in Schedule 1 of this regulation in the amounts set out in Schedule 3 of this Regulation.

3.-(2) The consumer may remove the product listed Schedule 1 of this regulation sold by the retail vendor from its package and give the package to the retail vendor at the time of purchase in lieu of paying a deposit to and receiving a refund from the retail vendor.

3.-(3) Subject to subsection (4) every retail vendor presented with a used disposable product or package that has been separated from its product shall accept the container and shall pay to the person presenting the container in cash the amount set out in Schedule 3 of this Regulation.

3.-(4) No retail vendor is required to accept a used disposable product or package that has been separated from its product if,

(a) it is not intact or in a reasonably manageable condition,

(b) it is being presented to the retail vendor by a person who has already received a refund from the vendor for up to and including any combination of 50 used disposable products or packages that have been separated from their products in any twenty-four hour period.

4. If a retail vendor collects more deposits from consumers than the amounts refunded to consumers under this Regulation then the retail vendor shall refund the difference to the Treasurer of Ontario.

5.-(1) Every distributor, processor and manufacturer shall collect from every retail vendor, on the request of the retail vendor, any used disposable product or package which has been separated from its product if it was distributed, processed, manufactured or sold by the distributor, processor or manufacturer and held by the retail vendor and shall reimburse the retail vendor, in full, for every payment made by the retail vendor under section 3.

5.-(2) When a distributor returns to a processor or manufacturer any used disposable product or package which has been separated from its product collected under subsection (1), the processor or manufacturer shall reimburse the distributor, in full, for every payment made by the distributor under subsection (1).

6.-(1) Every retail vendor that is subject to this Regulation shall clearly display on his retail premises a notice stating:

Regulations of the Province of Ontario under the Environmental Protection Act provide that a cash refund of the full deposit will be paid for a combination of up to fifty intact and reasonably manageable used disposable products or the packages which have been separated from these products in any twenty-four hour period.

FEES

7.-(1) Every manufacturer and distributor of any of the packages or products listed in Schedule 2 shall pay a semi-annual fee for each unit of product or package shipped by the manufacturer, distributor or processor in connection with the sale of a product or commodity in the Province of Ontario.

7.-(2) The amount of the fee is set out in Schedule 4.

7.-(3) If a fee as prescribed in Schedule 4 is required to be paid for a particular package by both the manufacturer and the distributor then they shall be liable for the fee on a joint and several basis.

7.-(4) The fee is payable until ten business days after the last day in June and December.

8.-(1) A manufacturer or distributor who does not pay the fee required by subsection 7(1) when due shall pay the late payment fees described in this section.

8.-(2) For each day after a fee becomes payable and is not paid, the manufacturer and distributor shall pay an additional fee of the percentage determined in accordance with subsection (4), calculated daily on the total amount of the fees owing, including fees payable under subsection (2).

8.-(3) On the thirtieth day after the original fee becomes payable and is not paid, the manufacturer and distributor shall pay an additional fee of 0.5 per cent of the amount of the fees, including fees payable under subsection (2).

8.-(4) For the purpose of subsection (2), the percentage, expressed as an annual rate, shall be determined by the Minister using the following rules:

1. The percentage shall be reviewed semi-annually and adjusted effective the 1st day of January and the 1st day of July in each year and shall remain in force until the next adjustment date.

2. If the adjustment date is the 1st day of January, the percentage shall be equal to the sum of two plus the mean rate rounded to the nearest whole percentage point of the prime rates of The Royal Bank of Canada, The Bank of Nova Scotia, the Canadian Bank of Commerce, the Bank of Montreal, and The Toronto-Dominion Bank on the immediately preceding 15th day of October.

3. If the adjustment date is the 1st day of July, the percentage shall be equal to

the sum of two plus the mean rate rounded to the nearest whole percentage point of the prime rates of The Royal Bank of Canada, The Bank of Nova Scotia, the Canadian Imperial Bank of Commerce, the Bank of Montreal, and The Toronto-Dominion Bank on the immediately preceding 15th day of April.

8.-(5) In subsection (4), "prime rate" means the annual rate of interest from time to time announced by each bank referred to in paragraph 2 of subsection (4) to be its prime or reference rate of interest then in effect for determining interest rates on the Canadian dollar by commercial loans by that bank in Canada.

8.-(6) If a distributor, processor or manufacturer of a package or product posing a waste management problem participates in a reduction, reuse or recycling plan which, in the opinion of the Minister, satisfies the waste management problems connected with the product or its package then this Regulation will not apply to that product or its package.

Schedule 1

This Schedule includes any materials which have been designated by the Province from time to time but is not limited to the following:

disposable products (to be determined by the Province);
hazardous household products;
motor oil;
paints; and,
solvents.

Schedule 2

This Schedule includes any materials which have been designated by the Province, from time to time, for residential Blue Box collection including, but not limited to:

newspapers;
magazines;
telephone books;
grocery product packaging;
soft drink containers;
beer, wine and liquor containers;
other beverage containers;
hardware packaging;
toy packaging;
household cleaning product packaging;
cosmetics and toiletries packaging;
pet food packaging;

pharmaceutical packaging;
soap and detergent packaging;
electronics, clothing and automotive products packaging; and,
all other types of consumer packaging composed in whole or part of glass, metal, newsprint, plastic, boxboard or corrugated cardboard.

Schedule 3

Deposit amounts to be determined by the Province.

Schedule 4

Fee amounts to be determined by the Province.

APPENDIX II : Duales System Deutschland (DSD)

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Scope & Mandate

Duales System Deutschland (DSD) is a German industry sponsored collection and recycling system for packaging waste which functions in tandem with a national "Green Dot" licensing system. DSD, owes its existence to the German Packaging Ordinance (Verpackungsverordnung) of 1991 which was issued under the Waste Avoidance and Waste Management Act (Abfallgesetz) of 1986. The aim of the Packaging Ordinance is to divert packaging wastes from disposal (packaging waste comprised 30% by weight and 50% by volume of all household waste in Germany in 1990) and gives full responsibility for collecting and separating packaging wastes to the private sector. The main goal of the DSD is to reclaim and recycle non-refillable packaging. The principle of the DSD/Green Dot system is to integrate waste management costs for packaging into the price of the product.

The Packaging Ordinance requires that all packaging be made of reusable or recyclable materials and must be reused or recycled. Manufacturers and distributors of packaging are obliged to accept its return after use, and reuse or recycle it outside of the public waste disposal system. Collection and sorting quotas, by material, are set out in the ordinance: by June 1, 1995, 90% of glass, metal, aluminum, and 80% of cardboard, paper, plastic and compound materials must be collected, sorted and prepared for raw material recycling. Residual wastes from this process are explicitly and narrowly defined and will be transferred to the public waste disposal system. These quotas represent a diversion from disposal of between 64 and 72% depending on the material. Packaging product manufacturers are required to take back the prepared materials for use as raw material inputs.

The Ordinance applies to all transport (drums, containers, skids, pallets, boxes, foam & shrink wrap), display/secondary (plastic foil sheeting, cardboard boxes, blister packs, anti-theft packaging, etc.), and sales (packaging which directly holds the goods; disposable cutlery and dishes are included) packaging from both domestic and foreign sources. The ordinance sets out provisions for all packaging and is divided into three phases according to packaging type.

Phase 1 went into effect in December of 1991 and requires that transport packaging used to deliver goods to retailers must be returned to the manufacturer for reuse or

recycling. Phase 2 went into effect in April of 1992 and allows consumers to leave shelf and display packaging in the store; retailers must provide suitable containers for collection. Phase three came into effect in January 1993 and stipulates that retailers must provide facilities to take back primary product/sales packaging and must impose deposits on sales packaging.

Packaging which is part of an existing waste collection or reuse system is exempt. The ordinance stipulates that retailers can exempt themselves from the collection and deposit provisions which apply to sales packaging if they participate in a privately funded collection system that guarantees recycling rates. If retailers do not participate in a private collection system, or do not meet mandated collection and sorting quotas, deposits will be imposed on sales packaging.

To protect existing reusable/refillable packaging, existing requirements for refillable beverage containers have been maintained and are expected to increase. Currently 72% of beverage containers must be refillable (17% of milk containers). If the refillable share falls below this, all beverage packaging will be targeted for deposits. Proof of meeting quotas for collection, sorting and recycling is clearly mandated in the Packaging Ordinance.

To avoid deposits on, and collection of sales packaging, and the disruption this would cause to the retail sector, German retail and industrial sectors have formed a company - Der Grüne Punkt. Duales System Deutschland Gesellschaft Für Abfallvermeidung und Sekundärrohstoffgewinnung mbH (DSD GmbH) - to operate the DSD which collects, sorts, and recycles waste packaging materials independently of the public waste disposal system.

How it Works/Financing

Participation in the DSD system requires that an acceptance and recycling guarantee has been issued by the relevant industry or company for the packaging material (which must be recyclable or reusable), that the manufacturer or retailer has signed a contract with DSD GmbH for the use of the symbol and has paid a license fee. This entitles the product(s) to a "Green Dot" label which signifies that a product manufacturer is participating in the DSD and exempts the product from a retail deposit. The "Green Dot" label achieves several things: it gives the consumer instruction on where to dispose of the item; it labels the item for easier source separation; it works as a marketing tool; and, it carries the financing of the system. Foreign companies can contract with a third party to discharge their obligations for a "Green Dot" license.

The DSD is financed solely by the Green Dot (Grüner Punkt) licensing system. The license fee covers the costs of system operations. If the mandatory recycling targets for any material are not met within the given time frame the exemption from the mandatory deposit will be recalled.

The license fee is used to pay for contracts drawn up with waste disposal firms and hence to develop the infrastructure required for the collection and sorting of packaging. However, the actual recycling costs are not covered by the fees. The manufacturers, through their guarantors, are responsible for recycling. Recycling costs accrue to packaging manufacturers, are included in their cost calculations, and passed along to the consumer goods manufacturers. Materials collected by the DSD are entering the recycling industry at zero cost; packaging manufacturers get the secondary materials for the costs of shipping. This provides the industry with a period of protected and controlled growth. However, it is anticipated that the industry will eventually have to purchase the secondary materials.

To date DSD GmbH had concluded about 9,000 contracts covering the right to use the Green Dot label. It was estimated that, by the end of 1992, 90% of all sales packages would be marked with the Green Dot - or approximately 80 billion packaging units. Calculation of the license fee is based on the volume or surface area of the package as follows: 0.0L to 0.2 L - 0.01 Deutsch Marks (DM); 0.2L to- 3.0L - 0.02 DM; 3.0L to 30.0L - 0.05 DM; > 30L - 0.20 DM. The fixed fee structure is expected to change to a variable fee structure as the DSD ties the fee to the actual collection, sorting and processing costs. Packaging which is more difficult to sort and process due to design and material composition will be subject to higher fees. In general these fees will raise consumer prices by an average 1/2% as the licensing costs filter down. Imported products are also integrated into the DSD system through third party operatives. This creates a "level playing field". Exported products are not included - the Green Dot is only for products sold in the German market.

Duales System Deutschland now has approximately 600 members from the retail trade and various industries and works in cooperation with public authorities to capture and recycle non-refillable packaging materials. The main objectives are to: promote the reduction of volume of packaging materials used; arrange and manage a depot and collection system that is convenient for the public at residential area locations that will include all the packaging sold by their participants; develop education materials to gain public support and participation; and insure that retail operations are not disrupted by deposit and return requirements.

DSD collection runs parallel to the municipal disposal system. The collection of packaging waste is covered by contracts between DSD GmbH and municipal or private waste disposal firms. Glass, cardboard and paper are collected at pre-existing municipal drop-off depots. All other materials are collected curbside by agents of the DSD. Hazardous wastes are not collected at the same locations as "Green Dot" materials. As with other cost components, the manufacturers pass on the cost for using the "Green Dot" to the retail trade and finally to the consumer. In order to keep these costs as low as possible, packaging manufacturers are being urged to use fewer materials which are more suitable for recycling. They are optimizing their sales packages to improve

competitiveness.

Materials are sorted at industry financed facilities, many of which are still to be built. In practice private and/or public sector waste disposal firms collect used packaging, sort it into individual material fractions and forward these to so-called "Guarantors" on behalf of the DSD. Guarantors are packaging manufacturers or companies established specially for the recycling and marketing of secondary materials who have agreed to accept and recycle materials collected by the DSD. Guarantors currently exist for six different material fractions: glass, paper, tinplate, aluminum, laminate board packaging and plastics.

As of August 1992 more than 50 million German citizens in over 300 towns, cities and villages were linked to the DSD system. By the end of 1992 it is estimated that 78 million citizens will be connected to the system. It has been estimated that an investment of 7 billion DM (US \$4.4 billion in 1992 dollars) will be required by 1995 to put in place the necessary infrastructure to accomplish the mandated recycling targets, and that operating expenses will be 2 to 3 billion DM (US\$1.25 to 1.87 billion in 1992 dollars) per year. 50 million DM have been budgeted for public education. Eighteen thousand new jobs will be created in the waste disposal sector by 1995. Approximately 7 to 8 million tons of waste will be recycled annually by the DSD through 200 sorting facilities. Such large quantities of secondary materials make large facilities economically feasible. By participating in the collection of materials traditionally collected by municipalities the DSD is helping to lower municipal collection costs by approximately 25%, which is the estimated percentage of packaging in the waste stream. Municipalities that are connected to the DSD are experiencing reductions of up to 14% in waste going to landfill in the first year of operation.

Independent monitoring agencies have been established which will verify the flows of materials to ensure that quotas are met. These Technical Inspection Agencies (TÜVs) will inspect the sorting plants to submit regular reports on incoming and outgoing materials. It is the job of the TÜVs to ascertain whether recycling facilities in Germany and abroad are capable of recycling the sorted packaging materials as specified in the Packaging Ordinance.

Problems

Potential problems include large quantities of secondary materials coming on stream without adequate markets to absorb them. There have been problems of contamination of materials. Markets for some materials, such as plastics, cannot absorb the flow of materials being collected at the current time. Markets for some recycled products are hindered by numerous health and safety regulations and standards. Another problem is that primary materials often have lower production costs than secondary ones. There is anecdotal evidence that the secondary materials are being exported, rather than used as raw material inputs in Germany. Finally, consumer participation, on which the system depends, is not guaranteed.

German Environmentalists have been highly critical of the law. They argue that the Packaging Ordinance will do little to reduce solid waste. Nor does it address the environmentally harmful contents of waste such as cadmium or mercury or differentiate these from less harmful packaging. There are no criteria to discern whether something is harmful or not. In addition, environmentalists claim that present technology isn't sufficient to recycle many materials (especially plastics), and composite materials, now used in packaging.

Future prospects

The DSD/Green Dot System has had encouraging results: there have been significant packaging reductions (26%) and problematic materials such as blister packs, PVC, laminates and composites are being taken off the market and replaced with materials that are easier to recycle. The DSD is accumulating technical know-how for recycling (collection, material handling and recovery) on a large scale and will be poised to export this technology to other countries. Consideration is being given to extending the requirements for packaging to the industrial and institutional sectors.

European recycling markets are being influenced by the large quantities of secondary materials coming on stream in Germany without cost as a raw material input. This is driving down the costs of production in Germany and giving their products a price advantage.

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APPENDIX III : US Secondary Materials Market Development Initiatives

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A number of US states have legislatively mandated recycling targets and goals - some as high as 50% (California) to 60% (New Jersey) of the municipal solid waste stream. These targets are contingent on availability of markets for the recyclable materials. The Market Development Committee of The Recycling Action Council (RAC) - a high level national multistakeholder recycling think tank established by the National Recycling Coalition - is considering various options to increase recycling rates. There is widespread recognition that low prices for virgin materials, and externalization of waste management costs, constitute formidable barriers to achieving targeted recycling rates. Other major barriers include: financial barriers; poor and/or inconsistent material quality; uncertainty in the regulatory process; and transportation and collection costs.

The Market Development Committee feels that "Domestic and international policies and initiatives are needed to define the roles and responsibilities of producers, consumers and government in developing recycling as an economically sustainable activity" (RAC, **Factsheet:Market Development Committee**). The Committee's mandate is to analyze and recommend public policies and private sector initiatives to: increase the demand for recovered materials and recycled products; eliminate economic barriers to increasing the use of recovered materials; establish the infrastructure needed to increase the use of recovered materials; improve the economic feasibility and sustainability of recycling; and promote economic development strategies to increase recycling. The Committee has established several task forces - a Market Structure Task Force and an Industrial Development Task Force - to consider current market conditions for recovered materials and to identify opportunities to expand and create markets for these materials.

The Market Development Committee has developed a "menu" of policy options to encourage manufacturer use of recycled materials. The primary options include:

- virgin materials fees/taxes;
- product-specific minimum content standards;
- material-specific utilization requirements;
- manufacturer's responsibility (similar to German DSD system);
- shared responsibility (similar to WRAC's model);
- establishment of a national secondary materials trust fund.

Secondary options include:

- advance disposal fees;

- tradable recycling credits;
- container deposits;
- landfill bans;
- user fees.

Options are not mutually exclusive and may be used in combination. The RAC is carrying out open public meetings on each policy option to narrow the menu. The RAC has published the Market Structure Policy Options Briefing Book which discusses the pros and cons of the various options from the point of view of industry, government and environmentalists. The following discussion is based primarily on that document.

Areas of general agreement include: the need for virgin material subsidies to be identified and their negative impacts to be investigated; the need for market-based incentives to increase utilization of secondary materials and the need to determine which current market forces have been successful in increasing demand for recovered materials; the need to create funding mechanisms to finance the development of the recycling infrastructure; the need to internalize the costs of recycling and disposal; and a preference for a national system.

Issues of generic concern include: administrative difficulties; impacts on existing recycling infrastructure, on business and on industry; financial impacts; monitoring and enforcement issues; the need for flexibility and efficiency; the need for cooperation and coordination among the various stakeholders in the recycling process.

The concept of virgin materials taxes has been around since the 1970s. However, there has never been sufficient support in Congress to pass such a law. The premise is that virgin materials are unfairly subsidized through tax laws and other fiscal policies, and there will never be an incentive for manufacturers to use secondary materials unless the price of virgin materials is increased. Most sectors agree that it makes more sense to remove the subsidies before taxing virgin materials. However, subsidies are deeply entrenched and will be politically impossible to eliminate. There are many problems with virgin materials taxes including what to tax and at what rate, the overall effect on the economy and employment, trade issues and administrative difficulties. There is strong opposition from primary resource industries.

Recycled content agreements and/or requirements for specific products or materials are in place in several states (New York and California). Proposed federal legislation would combine minimum content standards with a system of tradable credits. Under this system the amount of recovered material used in a new product that exceeded the minimum content requirement could be quantified into a credit that could be sold or traded. There is general agreement that recycled content requirements would increase demand for recycled materials, however there are fundamental problems such as what materials or products to target, how to set the rate, how to verify and monitor content claims, negative economic impacts and trade issues. This option is not market driven and

there is strong opposition from industry.

"Material-specific utilization requirements" would require certain manufacturers to ensure that a specified percentage of materials and/or packaging is reused, either through internal use in products or packaging, arranging for another entity to use it, reusing for original purpose, or reducing the amount or weight per unit sold. Tradable credits would be allowed for companies that cannot meet the requirements. While utilization requirements would increase demand for secondary materials, there are questions about which materials or products would be targeted, how the rates would be set and monitored, cost and efficiency issues, administrative complexity and which companies would be responsible. This option is not market driven and industry is concerned that it would force manufacturers into the recycling business.

The "manufacturer's responsibility" option is based on the German DSD model and would require manufacturers to be responsible for their packaging waste directly. They would have the option of setting up a private collection system or providing funds to government to get materials back. RAC members point out that the German system has mandated collection/sorting and not utilization, and feel that some concurrent utilization requirement would be necessary to increase recycling rates.

US legislation would be required to put in place a "manufacturer's responsibility" system. On the positive side RAC reports that: this option is market driven; that it would internalize waste management costs and assign responsibility to manufacturers; that it may increase collection, processing and design efficiencies; and by encouraging harmonization with European laws and more efficient industrial practices, it could enhance domestic manufacturers' international competitiveness. In addition, it would assist in ultimately determining the true costs of waste management.

A "manufacturer responsibility act" bill has been developed for introduction in the California legislature, which would require all manufacturers selling in the state to meet a 50% "utilization" rate by 1995. The rate could be met by having post-consumer content, by purchasing tradable credits, or by reusing the package. If the rate is not achieved on each material the company must pay a fee for materials shortage equal to the cost to recycle the material. The "utilization" rates ratchet up to 80% by 2001.

The "shared responsibility" option being considered by RAC is based on the Ontario Waste Reduction Advisory Committee (WRAC) model. In their analysis of the WRAC model the RAC notes that the concept involves: capping consumer waste management costs at the cost of municipally operated collection and disposal of mixed solid waste, with industry paying only for additional costs to recycle packaging materials; industry reimbursing municipalities, on a per ton basis, for the additional costs; waste generators (final disposers) fulfilling their share of responsibility by source separating designated recyclables from the waste stream; municipality responsibility for collection of recyclables and waste, for which it may assess a user fee, while IC&I waste is collected

by private haulers; and privately or publicly run MRFs.

The RAC analysis points out that this system provides a means of funding recycling and that, since producers are responsible for recycling, there are built in incentives for source reduction and designing for recyclability. The RAC notes that a user fee for waste collection would encourage maximum source separation of recyclables and that OMMRI would pay at least one third of start-up collection and processing costs.

The RAC analysis paid special attention to the opportunity the WRAC model offers for industry to establish voluntary agreements on waste minimization targets, recycling goals, a funding mechanism and implementation time frame. The RAC analysis explained the process outlined by WRAC for consultative regulations and back-drop regulations. In detailing the back-drop regulations the RAC notes that there is no mechanism in the model to distinguish cooperative from uncooperative producers.

Other perceived liabilities include: the complexity of the interdependent agreements and regulations; the amount of time required for implementation (5 years); ambiguities regarding what materials will be included, how agreements will be reached, and exactly what the costs will be for producers; the lack of a mechanism to stimulate demand for recyclables or investment in remanufacturing (does not address market demand); material quality concerns; possible adverse impacts on existing recyclers; administrative difficulties regarding national implementation; concerns regarding collection costs and efficiencies; concerns that it could promote flow control ordinances; the requirement that manufacturers get into the waste management business; and bias towards urban settings.

Perceived strengths of the WRAC model include: flexibility for manufacturers in implementing processing options; assignment of responsibility and internalization of costs; concept of shared responsibility which encourages public/private partnerships; and the reliance on available technology.

An analysis of the "shared responsibility" option by the publishers of the State Recycling Laws Update (SRLU) notes that industry would own the MRFs, that the concept does not allow rebates for use of recycled content, and that the idea is complex, poses anti-trust and flow control issues (with a "buy-out"), and that materials with no markets could initially be collected. SRLU also points out that, unless the fees are structured "right" there is less incentive for source reduction.

The "National Secondary Materials Utilization Trust Fund" concept would require companies (domestic and foreign) to pay a "material use fee" based on virgin materials used in packaging that is sold or manufactured in the US. The fee would be determined on the basis of the amount of the particular raw material's use as a secondary feedstock in domestic manufacturing as a percentage of the total amount of the material used. There would be no charge on any materials for which the reutilization rate in domestic

manufacturing exceeds 50% annually. Domestic manufacturers that use recycled materials would be eligible for a "material reutilization rebate". The "reutilization rate" would be based on the recycling rate (post-consumer content) of the packaging material only. The funds would be dedicated to recycling and go to a privately run funding organization with government oversight.

The fund would provide incentives for manufacturers to use secondary materials and would provide a source of funding for recycling initiatives. However, industry is concerned that some recyclers will come to depend on the rebate and go under if the utilization rate reaches 50%. Some feel it is administratively too complex and that there will be verification and monitoring problems. Moreover, others feel the fee should not be based solely on packaging recycling rates. The system is not market driven and would involve trade issues if foreign companies are not eligible for the rebate.

According to the packaging and product sector, none of the RAC options are good, but shared responsibility is better than the German model, and virgin taxes are better than content standards. Overall, it is felt that the policies focus too much on packaging. There is support from the EPA for "hammers" - laws that kick in if industry does not meet certain goals.

The RAC Industrial Development Task Force has noted that the California legislature is considering creating a new bank for recycling businesses, because banks won't lend to recycling enterprises since the business isn't in their books and is considered a high risk venture. The Task Force is developing recommendations on private sector financing strategies for increasing investment in recycling and is also working with the Chicago Board of Trade on a test to trade recyclable commodities.

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APPENDIX IV : Materials Collected through the Blue Box System (1992)

	<u>Mass (tonnes)</u>	<u>Percent of Total</u>
Old Newspapers	250,000	52.6%
Metal Containers	76,500	16.1%
Glass	104,000	21.9%
Plastics	6,600	1.4%
OCC	31,000	6.5%
Other Materials	7,500	1.6%
Total	475,600	100%

Source: OMMRI Annual Report: 1992: The Year in Review.

APPENDIX V : Project Personnel

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