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POLLUTION PREVENTION AND CONTROL EXTENDED PRODUCER RESPONSIBILITY IN THE OECD AREA PHASE 1 REPORT

Legal and Administrative Approaches in Member Countries and Policy Options for EPR Programmes

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

Paris 1996

31273

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F O R E W O R D

Many OECD countries -- in accordance with the polluter pays principle -- are taking measures to expand private sector (corporate) responsibility for conserving resources and energy and reducing the quantity of pollutants released and wastes sent to final disposal. This approach for extended producer responsibility (EPR) is aimed at making the private sector responsible for efforts to reduce environmental impacts from both use and discarding of their products and to use recycling, recovered resources and reclaimed materials in so doing.

In 1994, an OECD project on EPR was begun, focusing particularly on programmes to address what many regard as the "weakest link" in the product responsibility chain -- the final disposal of products after their sale to and use by consumers. In Phase One of the project, the Secretariat prepared a preliminary report identifying common issues arising in OECD countries developing and/or implementing EPR programmes. This report was based on more than 70 interviews across the OECD and was presented at the International Waste Minimisation Workshop held in Washington, D.C. in March 1995. EPR was generally supported as both a basic principle and an overarching strategy for waste minimisation by participants in the Workshop.

The present document is the final Phase One report. It identifies common issues arising in Member countries developing and/or implementing EPR approaches and provides an analytic framework for use by government officials. It also presents details on ongoing programmes and information about the legal and administrative structure used in each country to implement and enforce such policy measures. The report was prepared by Ms. Michelle Anders who was seconded to the OECD Pollution Prevention and Control Division of the Environment Directorate by the U.S. Environmental Protection Agency. The report was reviewed by delegates to the OECD Waste Management Policy Group and by delegates to the OECD Pollution Prevention and Control Group.

These efforts were carried out with the aid of funding kindly provided by the Government of Japan. A second phase of work -- also supported by Japan -- will focus upon analysis of the economic efficiency and environmental effectiveness of various approaches to EPR and anlaysis of EPR compared to other approaches. Legal issues concerning domestic competition, international competitivity and potential trade implications will also be examined. Case studies involving the private sector as well as other key actors will be used to examine the effects of implementing EPR regimes.

This Monograph is published on the responsibility of the Secretary-General of the OECD.

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PREFACE

In many countries, the responsibility of the private sector (corporate) for taking measures to prevent environmental pollution is being expanded -- under mechanisms for "extended producer responsibility" (EPR). The objective of EPR is to promote conservation of resources, reduce the use and generation of toxic and hazardous materials, and energy and reduce the quantity of wastes for final disposal. The private sector is thus responsible for efforts to reduce environmental effects from both the use and discarding of products and to use recovered resources, recycling and reclaimed materials in so doing.

Extended Producer Responsibility, as postulated by Professor G.A. Davis of the University of Tennessee (U.S.) embodies the principle that manufacturers of products should bear a significant degree of responsibility for the environmental impacts of their products throughout the products' life cycles, including upstream impacts inherent in the selection of materials for the products, impacts from the manufacturer's production process itself, and downstream impacts from the use and disposal of the products. Producers accept their responsibility when they design their products to minimize the life cycle environmental impacts and when they accept legal, physical, or economic responsibility for the environmental impacts that cannot be eliminated by design.

There are several policies that encourage producers to take responsibility for the life cycle environmental impacts of their products, both upstream and downstream, including environmental labelling, environmental procurement programmes, deposit/refund systems, minimum recycled content requirements, advance disposal fees, materials restrictions, product taxes, and materials regulations.

The design of products and product systems is the most critical step in determining the nature and quantity of resource use and pollution outputs throughout the products' life cycles. In addition to determining the impacts of the manufacturing process for the product, the choice of materials for a product, for instance, determines the environmental impacts upstream in the extraction and processing of raw materials. Material selection also determines the downstream impacts during the use state and in the ultimate disposal of the product. It is also the producer at the design step in product development who has the greatest ability to minimise solid waste generation and the impacts of solid waste management.

The implementation of EPR has the potential to minimise pollution throughout the life cycle of a product by encouraging the consideration of the life cycle during the design of the product and the production process. EPR can be seen as a way to "get the price right" by preventing producers from transferring the cost of dealing with the externalities (e.g. pollutants, waste, environmental degradation) of product systems to other links in the product chain that are least capable of preventing those externalities.

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These efforts were carried out with the aid of funding kindly provided by the Government of Japan. A second phase of work -- also supported by Japan -- will focus upon analysis of the economic efficiency and environmental effectiveness of various approaches to EPR and analysis of EPR compared to other approaches. Legal issues concerning domestic competition, international competitivity and potential trade implications will also be examined. Case studies involving the private sector as well as other key actors will be used to examine the effects of implementing EPR regimes.

In addition, the concept of shared responsibility for the generation of pollution/wastes and their reduction and minimisation will be considered in Phase Two. Since many generators, e.g. producers, transporters, retailers, consumers and so on contribute to releases, this concept of shared responsibility needs to be examined. Such a shared responsibility regime could incorporate EPR; that is, shared responsibility would not mean that an EPR system need be reduced, replaced or dismantled. Rather the shared responsibility approach might augment EPR by involving all generators in efforts to reduce and prevent pollution/wastes and to handle in an environmentally-sound fashion those releases which inevitably occur.

EXECUTIVE SUMMARY

What is Extended Producer Responsibility (EPR)? EPR is an emerging strategy being used in OECD (and other) countries to promote the integration of environmental costs associated with products ***throughout their life cycles*** into the market price of the products. These programmes change the traditional balance of responsibilities among manufacturers and distributors of consumer goods, the consumer, and the government, particularly with regard to the post-consumer stage of the product's life. They ***extend*** the responsibilities assigned producers and distributors in the past (i.e. worker safety, prevention and treatment of environmental releases from production, financial and legal responsibility for sound management of production wastes) to include responsibilities (whether financial, physical, or both) for the management of the product at the post-consumer stage. By doing so EPR encourages producers to re-evaluate decisions regarding materials selection, production processes, packaging, and marketing strategies to reduce costs for which they have, for the first time, become responsible when the product reaches the post-consumer stage. This systems, or life cycle, approach to product design and production presents a unique incentive for the producer to act in ways that will promote goals shared by OECD governments: waste prevention and reduction, increased use of recycled materials in production, and internalization of environmental costs in product prices.

The most common characteristics of implementation approaches for EPR strategies in OECD countries to date include: (a) government mandated reduction and/or recycling targets; (b) conditions under which producers may transfer their individual responsibilities to a collective industry entity formed for that purpose; and (c) specific requirements related to other government goals, such as retention of market share for reusable products or conditions under which energy recovery may be counted toward achievement of the recycling targets. Such conditions may be established in enabling legislation, implementing ordinances, or voluntary agreements.

To date the responsibilities of other actors have played a relatively minor role in the communication of EPR strategies, yet their role is critical if the programme is to be successful. Perhaps the single strongest incentive governments can provide to foster achievement of waste reduction and recycling at the household level is unit-based pricing. Local authorities will continue to be involved in managing municipal wastes, and will provide an important feedback loop for national authorities regarding the effectiveness of the strategy's implementation. National authorities should ensure that government purchasing policies address and favour, wherever possible, products containing recycled materials. In order to stimulate secondary markets, they may also provide support for research and development or commercialization of technologies and plants needed to process secondary materials.

Some governments, and many in industry, have expressed a preference for a "shared" responsibility approach. This implies that more precision is needed to indicate what entity is the "producer" to whom responsibility is extended. For example, "producers" can be raw material suppliers, fabricators of products, suppliers of parts to assemblers, fabricators of packaging and so on. In a "shared responsibility" regime, an equitable allocation of responsibilities along the life cycle of a product is an important objective. OECD is currently exploring options for suggesting ways to distribute responsibility along the life cycle.

Purpose of This Study. OECD governments have expressed interest in how EPR, which many view as an important new interpretation of the Polluter Pays Principle, can be put into effect. They are

eager to learn about experience to date in OECD countries and to identify the key issues to be addressed in the design of EPR strategies. This paper responds to such interests in two ways: it provides government policy-makers with a framework for analysing the utility of an EPR strategy, and makes available information concerning the current state of implementation of EPR strategies in the OECD area. The framework is presented in discussions focusing on a series of questions that confront decision-makers. The primary focus of the narrative and supporting illustrations is EPR strategies in the context of municipal waste management. Information on EPR implementation in the OECD area is provided in three Appendices which provide: (1) information on the legal framework supporting EPR strategies being implemented or developed, (2) an overview of implementation tools and the scope of their coverage, and (3) a detailed look at implementation approaches used for packaging wastes.

Experience to Date. To date ten OECD governments have adopted national legislation that provides authority to impose EPR requirements on producers of a variety of products. Four others have such legislation covering limited product categories or limited areas of the country. Four more are currently engaged in discussions that are intended to lead to new national legislation for EPR. Details of the legislative provisions of the OECD countries are provided in Appendix 1.

The product categories that are most commonly addressed are packaging, electric/electronic products, automobiles, waste paper, and motor oils, though quite a wide variety of products have been included. To date, implementation experience is limited since most programmes are quite new. Only in Germany and Austria, with regarding to packaging waste specifically, have results become available.

German authorities report that packaging was reduced by one million tonnes between 1991 and 1993. In addition, multi-use packaging for drinks increased in market share from 72 per cent to 74.5 per cent, and a clear trend is reported toward reusable transport packaging. More than 400,000 tons of packaging wastes were collected and recycled in Austria in 1993. These are encouraging results for the governments implementing programmes, yet adjustments continue to be made in both these early programmes to address issues that have arisen in the experience gained. Other countries are able to provide results for parts of their current programmes (usually those that pre-dated the EPR label, but do in fact extend the responsibility of producers, such as returnable beverage containers), but time will be needed before the overall strategy can be evaluated using hard data. Information concerning the implementing ordinances, regulations, and voluntary agreements for all kinds of product categories is provided in Appendix 2. Appendix 3 provides a more detailed look at packaging requirements throughout the OECD area.

Analytic Framework. Insights can be gained and issues identified by posing a series of questions. Seven questions are proposed as the analytic framework for decision-makers considering adoption of an EPR strategy. They are presented in summary form below:

Framework for Analysis
(1) What are the issues driving decision making -- why consider an EPR strategy? (2) What is the current domestic situation, the regional variations, and the implications of the variations? (3) What is the international dimension in relation to the domestic situation? (4) What are the views of the main stakeholders on the issues of concern, and what targets do they consider achievable? (5) What alternative measures are available to achieve the goals, taking into account that a combination of measures may be desirable? (6) How can one ensure that policy implementation meets national goals while maintaining domestic and international competition? and (7) How will success be measured?

The issues driving decision making may lead to different emphases in the responses to three key areas for EPR: the measures imposed on producers, supporting measures undertaken by governments, and the timetable for achieving the goals. Where ***sustainable development*** is the primary concern, heavy emphasis is likely to be placed on resources consumed in production. Where decision-making is driven by ***product policy***, one might expect to find emphasis on specific products or product categories that pose problems during the consumption or post-consumption phase. ***Waste management***-driven decisions are more likely to focus on specific percentages of post-consumer materials to be recycled or diverted from final disposal, with supporting government actions related to research and development or commercialization activities for materials recovery technologies and capacities. While different countries will develop strategies directed toward one or another of these issues, it is difficult, if not impossible, to identify approaches for implementing an EPR strategy that do not have impacts in each of these major areas.

A clear picture of the current domestic situation as it relates to the specific problem to be addressed is essential. With respect to waste management driven strategies, an examination of the ***current generation and composition of municipal waste*** is essential to identify the potential targets of opportunity for EPR and to identify appropriate policy tools. ***Current management methods and costs*** can provide important insights into the point at which an intervention might be most beneficial. In addition to providing a baseline against which to consider policy options, this information can help to motivate citizens to participate and to ensure government actions complement those being taken by producers. Following this assessment an ***examination of the current infrastructure for recycling potential target wastes and the related secondary materials markets*** can be initiated. Consideration of the structure and composition of the production chain follows. Important stakeholders must be identified, and a strategy prepared for involving them in the dialogue. Finally, an ***analysis of the legal bases for various approaches*** to EPR,

including an analysis of the ***flexibility available to local authorities*** to adjust to a national policy shift, should be initiated to identify the parameters within which a programme must operate.

External factors, particularly in the international arena, may influence the choice of options for action. Analyses of external policies can be expected to clarify the existing situation of domestic producers, identify pending changes outside national authorities' control, describe alternative actions to address a particular problem, and provide an opportunity to learn from the experiences of others. Domestic factors will, of course, remain determinative.

EPR strategies require consultations throughout the product chain, from materials extractors through end-of-life processors. Important differences in the positions and concerns of different sectors will necessitate an understanding of each in order to set parameters within which industry-led decisions can be made and to ensure an equitable distribution of responsibilities and costs. For many governments a key element of the communications strategy is requiring the industry chain to develop an EPR proposal within established parameters. While EPR strategies have the potential to influence a wide range of actors to prevent waste and improve the management of waste that cannot be prevented, the time required to develop them is often considerably longer than that necessary to develop direct regulations using established procedures.

There are two main bases for implementing an EPR strategy: regulation or negotiation. Either can be supplemented with economic instruments to address specific policy preferences. Governments have routinely set three framework conditions within which industry can define and evaluate options for action. These conditions (1) set specific targets and time-frames that producers must achieve; (2) define the responsibilities of each individual, as well as conditions under which individual responsibilities may be transferred to a collective sector response (hereafter referred to as industry exemption schemes); and (3) specify other measures that are important in the overall strategy of the policy-makers (e.g. establishing a percentage of market share that must be retained by reusable products).

Direct regulation offers certain benefits, among them an unambiguous transfer of responsibility leading to the timely achievement of concrete targets. Detractors posit that decision-makers are insufficiently sensitive to the costs of compliance and, in some cases, question whether the environmental benefits merit the costs. Potentially negative aspects of such approaches could be tempered using a variety of measures: extending the time period over which rates must be achieved; using energy recovery in establishing targets; and designing government interventions to enhance secondary materials markets.

Suasive instruments have also been used as the basis for EPR strategies. Direct regulation may be used to enhance suasive strategies to ensure that industry-initiated solutions apply equally to all producers, thus preventing competitive advantages to non-participants. Two key factors in achieving success with voluntary agreements are: (1) a limited number of key players, and (2) a credible regulatory threat absent achieving an agreement. The latter argues for a time-limited evaluation of whether parties to the agreement are achieving commitments, and a willingness by the government to initiate unilateral action if necessary.

If governments choose to base EPR efforts on ***economic instruments*** they will need to be willing to accept a significant new administrative burden, as well as acknowledge that "payment" is an adequate demonstration of responsibility. Such an approach will require an exacting process to determine the level of charges that will induce industry to respond in the desired fashion, given the many different products within a specific category that may be a target of an EPR strategy.

Several issues have been raised regarding industry organisations administering take-back programmes on behalf of individual producers. The ***first*** is whether these organisations should be allowed to operate nationwide, effectively without competition. To dat, governments appear to conclude that contracts and cooperation between the companies involved do not directly restrict competition so long as

waste management firms are not represented in decision-making bodies. The range of responsibilities exercised by such organisations can also raise issues related to the flow of recyclables through the domestic and international markets. On the one hand, a strong central organisation can exercise considerable power during negotiations to bring the costs of collection and management to their lowest achievable level. On the other, such costs are not equal across the country, and where contracts are let on a centralized basis, some effects on competition among waste collectors and handlers may be expected. Inadequate domestic recycling capacity to achieve the targets may lead to waste exports, which are sensitive political issues.

Although the potential effect of EPR strategies on the competitivity of domestic industries vis-a-vis those of the country's trading partners has been raised, this concern appears to be more relevant to the cost of achieving compliance with environmental requirements in general than it does to EPR strategies in particular. As implemented, most EPR strategies make adjustments to ensure that imported goods comply with the same strict standards, and that exported goods are exempted from requirements, consequently they should be neutral in result. The potential for such impacts does exist, however, where more stringent environmental controls relating to manufacturing and recycling processes are imposed simultaneously with an EPR strategy. This potential is highest where the goods are competing in markets where environmental controls are markedly less stringent, and is not likely to be a significant factor within the OECD area.

In the framework of ***international trade***, requirements for take-back, reuse and/or recycling of post-consumer products are subject to international rules for product standards. Under these rules, discrimination, technical barriers to trade, and cost and competitivity effects out of proportion to an environmental objective for a policy must be avoided according to rules of international trade. Existing EPR programmes appear to avoid the problem of ***explicit discrimination*** by applying collection and recycling requirements to both domestic and imported goods, while exempting exported goods. ***Implicit discrimination*** poses a potentially greater problem, since domestic enterprises have a greater opportunity to influence national policy making, and national policy is likely to consider domestic products and conditions (which are chosen according to national preferences) more fully than those outside its borders. Attempts to expand markets for secondary materials by imposing recycled content requirements for products could raise concerns, since rules affecting the production process outside national borders may be triggered.

Technical barriers to trade may be caused by a proliferation of national schemes that affect persons marketing products internationally, by a lack of transparency of the policy, or simply by a failure to provide adequate notice of new policies coming into effect. Most of these problems can be easily avoided by careful attention to the policy development process, which could be modified to include early notification to significant trading partners, and realistic compliance dates following publication of new requirements.

Because one of the main purposes of EPR is to incorporate waste management costs into products, every EPR scheme can be expected to raise direct costs of producers, though the increase is likely to be identical for domestic and foreign market entrants. Indirect costs, however, may be greater for foreign enterprises. International bodies charged with settling trade disputes lack established criteria for evaluating the proportionality of the trade effects of product requirements to their intended environmental benefits.

Consideration is given to four aspects of potential outcomes. The first is measures to determine whether ***goals/targets have been achieved.*** The use of obvious measures, such as waste prevented, waste diverted from land disposal, and wastes subjected to recycling, requires well calculated baseline figures representing the status quo before the strategy was launched. Perhaps the most meaningful measure of waste minimisation is waste per unit of product output. This measure not only allows determination of progress in waste minimisation without being obscured by manufacturing growth, but also provides the baseline against which enterprises can make rational decisions regarding their response to waste prevention and minimisation policy signals from the authorities.

The second aspect is the environmental and socio-economic consequences of having achieved the goals. ***Overall environmental benefits are difficult to measure. They are best understood in the context of the full life cycle of the products, but not all EPR strategies are designed using life cycle approaches.*** Some ***economic impacts*** are easier to measure, such as the cost of managing a ton of waste under the EPR strategy compared to the cost of managing a ton of waste if the status quo had been maintained. ***If simply raising product prices or shifts in product mix can be utilized to absorb the additional costs, the incentive to reduce wastes may be lost. Socio-economic consequences*** may include shifts in employment, reduced availability of investment resources for other social purposes, and increases in consumer prices across a variety of marketplace goods.

The third aspect considered is ***whether the benefits of having achieved our objectives outweigh the costs.*** The relative importance assigned various elements of such an evaluation is highly subjective and culture-based. Even the elements to be evaluated are likely to vary from country to country or region to region. Informed public debate concerning the costs and benefits of EPR strategies adopted can only be obtained if transparent, publicly available information is secured through programme design.

Finally, the importance of communications with the general public and the concerned stakeholders is considered. Periodic efforts to reinvigorate citizen participation are required, since the interest level of individual households will be the ultimate arbiter of how much recyclable material is collected. Maintaining open communications with local authorities, perhaps forming advisory boards or consultation groups from across the country, will also provide an important, informed, and objective source of information regarding performance achieved under the strategy. Continuous monitoring of implementation should include routine discussions with international counterparts and trading partners.

Conclusions. EPR strategies are in an early stage of development. Environmental benefits are difficult to quantify taking into account the life cycle of target products. Economic costs are more quantifiable, but are not widely enough understood to foster an informed public debate on whether the benefits exceed the costs. Potential social consequences are difficult to predict absent systematic models. Under these conditions, the best course of action is not always clear.

The following recommendations are offered for decision-makers designing implementation approaches for EPR strategies:

(1) Consider phasing in the strategy, beginning with measures to promote markets for secondary materials and stimulate development of recycling capacity, followed by establishment of recycling targets.

(2) Require that industry exemption schemes provide full accounting for financial transactions that are available on demand and easily understood by the general public.

(3) Establish oversight bodies composed of local authorities and representatives of major stakeholder groups to monitor the performance of industry exemption schemes and make recommendations for policy or programme changes.

Governments are encouraged to consider the following steps to support EPR approaches and encourage resource conservation, waste prevention and recycling:

(1) Require local authorities to establish unit-based pricing for municipal waste management based on full-cost accounting, and publish results.

(2) Ensure that government purchasing policies maximize the cost-effective use of products containing secondary materials.

(3) Use all available leverage to ensure that purchasing policies of subordinate government units, enterprises providing services to government, and other enterprises, implement similar purchasing policies.

(4) Eliminate tax incentives and financial supports that favour use of virgin materials in products for which secondary materials provide an effective substitute.

(5) If economic instruments are employed to stimulate waste prevention and/or recycling, earmark revenues received for programmes related to these goals, and consider passing such revenues to local authorities for doing so.

Particularly at this early stage, there is much to be gained from OECD governments' working together, with other international organisations as appropriate, to:

(1) Develop shared methods to compare the costs and benefits of alternative approaches to waste prevention and recycling.

(2) Develop case studies of trade effects attributed to implementation of national waste prevention and recycling strategies.

(3) Consider joint strategies for handling significant increases in secondary materials supplies and resulting market disturbances.

(4) Continue to refine and apply life cycle approaches to environmental policy development.

(5) Develop models capable of predicting the social consequences, including employment shifts, of environmental policy.

INTRODUCTION

The purpose of this paper is twofold:

(1) to provide government policy-makers with a framework for analysing the utility of developing or modifying an ***Extended Producer Responsibility*** (EPR) strategy in response to environmental concerns, and
(2) to make available information concerning the current state of implementation of EPR strategies in the OECD area.

The framework for analysis is presented as a narrative discussion responding to a series of questions that confront policy-makers during policy development and implementation. ***The primary focus of the narrative and supporting illustrations in this paper is on EPR strategies in the context of municipal waste policy, though such strategies may also be developed in the context of sustainable development or product policies.***

Information about the current state of EPR implementation in the OECD area is presented in three Appendices. These Appendices provide (1) information about the legal framework supporting EPR strategies being implemented or developed, (2) an overview of implementation tools and the scope of their coverage, and (3) a detailed overview of implementation approaches used for packaging wastes.

The material presented in the narrative and the implementation information provided in the Appendices were developed in extensive consultation with OECD Member governments and interested parties in OECD Member countries. The consultations included submission of written materials as well as extensive personal interviews in Austria, France, Germany, Japan, the Netherlands, Sweden, the United Kingdom and the United States as well as at the European Commission. Themes that emerged during the interviews were summarised in an interim report, which was presented at the OECD's International Workshop on Waste Minimisation in March 1995. Those themes, augmented by discussions held during the Workshop, at the OECD Waste Management Policy Group meeting that immediately followed the Workshop, and at a subsequent meeting of the Pollution Prevention and Control Group, led to development of the analytic framework presented in this paper. However, with the exception of one issue -- whether EPR should be "renamed" ***shared responsibility*** or ***extended product responsibility*** -- these background themes and discussions are not directly repeated or referred to here. Contextual information concerning the evolution of EPR as a strategy building on the application of economic instruments to environmental issues is also presented in the interim report. Therefore, readers may find it useful to consider the interim report in conjunction with this paper.

The author wishes to thank the many persons who generously contributed their time, observations, and expertise for making this work possible. Factual errors and conclusions remain the exclusive responsibility of the author.

I. EXTENDED PRODUCER RESPONSIBILITY: DEFINITION, DEBATE, AND DESIGN

Definition. ***EPR is defined, for purposes of the OECD project, as the extension of the responsibilities of producers to the post-consumer stage of products' life cycles.*** EPR strategies suggest

that the use and post-consumer phases of a product's life cycle are important aspects of the "pollution" for which responsibility must be assumed under the Polluter Pays Principle.

EPR is employed by governments as a strategy to transfer the costs of municipal waste management from local authorities to those actors (i.e. the producers) most able to influence the characteristics of products which can become problematic at the post-consumer stage: waste volume, toxicity, and recyclability. By transferring these costs, governments hope to provide powerful incentives for producers to prevent waste generation, reduce the use of potentially toxic inputs, design products that are easily recyclable, and internalise the costs of waste management into product prices. Consumers, using price signals which have been corrected to include the costs of waste management, can make more informed product choices and assume the financial burden previously assigned to the taxpayer.

In addition to the transfer of waste management costs, a critical element of the strategy has been to demand an increased level of recycling above what has been achieved by local authorities prior to the implementation of EPR. The statement of goals by governments has shifted in an important way: from the best environmental performance given a fixed budget (when local authorities are held responsible) to a given environmental performance without regard to cost (when producers are held responsible).

Debate. The response of producers to this revolution in policy development has varied. However, two issues quickly became and remain the subject of heated debate: (1) the acceptability of targets set for recycling and the time-frame for achieving them, and (2) the extent to which other actors share responsibility with producers. The first issue is a question that governments ultimately must answer as they consider the costs and benefits of an EPR strategy. It will be answered differently by different countries, as well as by different actors within a given country. The second issue, in addition to being an important practical question in terms of implementation, is a question of equity.

The model of responsibility for post-consumer products (i.e. wastes) operational in the OECD area in the late 1980s was a shared one. National authorities set broad policy directions to be implemented by local authorities within the flexibility afforded by national policy. Taxpayers (transformed into consumers in EPR strategies) assumed the financial burden for implementation of the policy. However, the actual dimensions of that burden were not transparent in most cases, nor are they now for the portion of waste that continues to be managed solely by local authorities. Historically hidden in the overall tax burden, or assessed at a flat rate per household if identified as a separate line item, the cost of waste management most often was not assessed in a manner to provide an incentive for individual taxpayers to reduce waste generation. Policies directed at separating recyclables at the source became increasingly common as final disposal capacity became more limited. Such policies were successful as far as they went, but for practical reasons were limited to recyclables for which relatively stable markets existed. Where markets were volatile or non-existent, obstacles mounted. Local authorities, unable to overcome the technical obstacles or pay the costs of collecting and recycling materials where they outweighed the benefits, slowed or halted expansion of recycling efforts. EPR strategies entered the picture.

EPR strategies have significant potential to reduce the amount of materials that enter the commercial cycle and ultimately become wastes. To the extent that the integrity and marketability of a product are not impeded, reductions in materials use (and therefore waste generated) are attractive to producers from a purely economic frame of reference. However, product redesign for recyclability and process changes to accommodate new inputs take time and resources, which mean additional costs in almost every case.

Physical responsibility for collection and/or recycling of the products, imposed in some EPR strategies, means an even greater burden. Investment funds devoted to recycling technology development and capacity development mean more costs. The burden is larger for wastes for which secondary markets are volatile or non-existent, and which were not recycled pre-EPR. However, when EPR is the government's strategy, abandoning such efforts is not an option available to the producer. Under the

burden of such extensive new financial obligations, it is not surprising that "producers," as they have been variously defined, ask the question: What about the "other" generators of waste -- the households and commercial enterprises which consume the products? The responsibilities of these parties, where addressed, are handled differently within OECD countries.

National and local authorities continue to play an important role in the overall implementation of EPR strategies. Consumers also play an important role -- by exercising choice in the marketplace, by developing habits that support separate collection and recycling, and by paying the costs, whether as part of local taxes or of product prices in the marketplace. What is true of consumers as individuals is also true of national authorities, who are major consumers in their own right in domestic economies.

If these continued responsibilities on the part of actors other than producers seem self-evident, their continued importance in the overall shift of strategy is not. Some governments have not formally acknowledged the role of the consumer, and some have explicitly relieved the local authorities of "responsibility" in law or ordinances implementing EPR strategies. In addition, local authorities often complain that they are neglected in the policy development process until it is too late to have a major impact.

OECD government leaders could usefully debate the many points of view associated with these questions. It is the new level of responsibility assumed by producers that is the most dramatic development in environmental policy for many years, yet few would argue that consumers and local and national authorities will continue to play an important role in the municipal waste management system. Defining the appropriate roles for each actor in a radically redesigned waste management delivery system will be important to achieving policy objectives. Changes in the product design and post-consumer collection systems that are implied in the strategy will need to be supplemented with altered implementation at the level of local authorities, and behaviour changes at the level of the individual household.

Design. The most common elements of EPR strategies to date include:

(1) Reduction and recycling targets, including dates for their achievement;

(2) Conditions under which industry associations may act on behalf of producers to fulfil their individual responsibilities; and

(3) Other conditions relating to particular aspects of government policy to be achieved apart from waste reduction and recycling.

In addition, most require producers, individually or collectively, to take back and recycle their products which have reached the post-consumer stage. Exclusions from requirements may be established for some products or product categories, usually those that are part of deposit-refund schemes, or for which implementation is delayed because recycling capacity is not available.

Decisions regarding the first two elements are critical. Targets, and the dates by which they must be achieved, are important determinants of the environmental benefits and economic costs of implementation. Environmental benefits, considered over the life cycle of the product, are difficult to quantify. Costs will rise as targets do, and will rise more quickly as targets become more aggressive. Determining targets and timelines that will ensure environmental goals are met without excessive costs is a difficult process. Decisions regarding the appropriate balance between costs and benefits are heavily based on cultural factors, and will vary among countries and even regions within countries.

The second element gives rise to "industry exemption schemes", permitting creation of organisations that fulfil the conditions under which individual producers may transfer their responsibilities to a collective body. Since development of product take-back and recycling programmes (which are the

core of EPR strategies) at the level of each individual producer is largely unworkable, virtually every EPR strategy has spawned such an organisation. They carry out a variety of responsibilities, from establishing contractual arrangements with firms that will guarantee the achievement of recycling targets (usually material specific), to setting prices for the participation of individual producers, to developing and reporting data required by the government, to undertaking public education efforts to ensure citizen participation adequate to achieve the goals. Thus, two entirely new types of organisations have been created by EPR strategies: the industry exemption scheme (an administrative organisation) and recycling guarantor firms (usually composed of materials recycling firms). How well these organisations function and the costs they incur and pass on to consumers will virtually control the outcome of an EPR strategy. It is therefore imperative to ensure that such operations are conducted within parameters that are satisfactory to the policy maker and are free from conflicts with domestic and international laws and policies regarding competition and trade.

The third element of the strategy addresses specific policy preferences of countries, and is often designed to ensure continuation of practices or programmes that are considered environmentally beneficial, such as reuse programmes for beverage containers.

As authorities evaluate whether and/or how to develop an EPR strategy, there are a number of questions that will need to be answered. These questions are examined in the pages that follow, and are presented below in Table 1.

Table 1: Framework for Analysis

(1) What are the issues driving decision making -- why consider an EPR strategy?

(2) What is the current domestic situation, the regional variations, and the implications of the variations?

(3) What is the international dimension in relation to the domestic situation?

(4) What are the views of the main stakeholders on the issues of concern, and what targets do they consider achievable?

(5) What alternative measures are available to achieve the goals, taking into account that a combination of measures may be desirable?

(6) How can one ensure that policy implementation meets national goals while maintaining domestic and international competition? and

(7) How will success be measured?

While examining these questions, decision-makers will consider the views of many knowledgeable domestic stakeholders and of their international counterparts. In the end, however, the balance of costs and benefits a given approach can only be weighed in the cultural context in which the decision is made.

II. QUESTION ONE: WHAT ARE THE ISSUES DRIVING DECISION MAKING -- WHY CONSIDER AN EPR STRATEGY?

Clarifying the issues driving decision-making will help to articulate the overall environmental goal, identify the relevant stakeholders, and focus analysis on the use of particular strategies. EPR strategies have become a focus of analysis when considering three major, related issues: waste management, product policy, and sustainable development.

Sustainable Development. The broadest of the issues cited in connection with EPR, sustainable development, fully encompasses the others. It includes consideration of both the environmental and economic impacts of production and consumption. Though there is no generally accepted definition of the term, sustainable development policies place emphasis on resource management choices that fulfil the needs and desires of today's population without endangering the ability of tomorrow's population to fulfil its own. The types and amounts of products consumed, how they are produced, and how the wastes resulting from production and consumption are managed are resource management decisions that may or may not lead to sustainable development.

Product Policy. Historically, product policies have been driven largely by concerns related to consumer health and safety, or the use of ingredients that are potentially or inevitably harmful to the environment. The post-consumer (or waste) phase of the product (which may or may not be a significant aspect of the overall environmental impact of a product) has not been a major focus of product policies until recent years. The expansion of product standards or other requirements has generally as an unnecessary and unwarranted government intrusion into a free market system. In some countries this may still be the case, yet OECD countries are increasingly addressing product policy to the full range of potential environmental impacts. This trend has been encouraged by the increased emphasis on life cycle approaches to environmental management. The assimilation of environmental values into product design and marketing has also increased over time as industry has initiated voluntary efforts to produce and market environmentally preferable products (e.g., products that are recyclable, made from recyclable material, or that have other characteristics considered desirable to environmentally conscious consumers). Post-consumer product attributes often figure prominently in such campaigns and are publicized through, for example, eco-labels, which have increased steadily in popularity throughout the 1980s and 1990s.

Waste Management. Waste management policy priorities have evolved over the last twenty years from establishing protective standards for final disposal to promoting waste prevention and minimisation. This evolution has highlighted the importance of product design and the selection of ingredients used in manufacturing in managing the resulting post-consumer waste. Many governments have tackled persistent waste management problems associated with final disposal operations (e.g., heavy metals in municipal landfill leachate) through approaches directed at single products or single product categories (e.g., policy instruments designed to reduce the use of mercury in batteries). EPR strategies have been applied in the area of waste management specifically to address the need for reduction of final disposal of materials and the internalization of waste management costs. As producers respond, there are frequently impacts in the areas of production, consumption, product design and distribution. The role of the consumer or taxpayer, which received significant attention in the late 1970s has not changed, but it has not received the same level of attention as the role of producers in the last seven to eight years.

Issues Influencing EPR Design. ***The issues driving decision making may, however, lead to different emphases in the responses to three key areas for EPR: the measures imposed on producers, supporting measures undertaken by governments, and the timetable for achieving the goals.*** Where ***sustainable development*** is the primary concern, heavy emphasis is likely to be placed on resources consumed in the production phase, including questions such as whether they are from renewable sources, and how to ensure that the environmental costs of resource extraction are included in materials and product prices. Supporting government policies might include environmental taxes on non-renewable resources.

One might also expect a heavy emphasis on a life cycle approach, so that measures are designed to maximize the overall environmental gains without limiting action to a particular phase of the life cycle.

In contrast, if decision making is driven by ***product policy*** one might expect to find emphasis on specific products or product categories that pose problems during the consumption or post-consumption phase of the life cycle. Focus on increased attention to product design for durability and recycling and transparency of environmental impacts for the consumer may also be expected. Supporting government actions could include programmes to identify preferable products for consumers, such as eco-labels.

Waste management. driven decisions are more likely to focus on specific percentages of post-consumer materials to be recycled or diverted from final disposal, with supporting government actions related to research and development or commercialization activities for materials recovery technologies and capacities. Concerns about the internalization of costs may be more narrowly focused on internalizing waste management costs. Time-frames for achieving goals may be less flexible if waste management issues are driving the decisions, since many countries may find themselves short of final disposal capacity well before the potentially dire effects of unsustainable development practices will be faced.

It is difficult, if not impossible, to identify approaches for implementing an EPR strategy that do not have impacts in each of these major environmental policy areas. Any change in the national pattern of resource consumption will affect both the products and waste generated as a result of such resource consumption. Changes in product design or production will influence waste composition and volume, and will also have effects on resource consumption patterns. How wastes are managed can influence the amount of virgin materials consumed in production, and may influence product design. All of the various approaches mentioned can be used in combinations to address one or all of the issues. The objective is to find an approach that achieves the desired outcome without, at the same time, creating unintended consequences.

Two examples of how EPR strategies fit into the overall environmental policies of two OECD countries are provided below.

THE CASE OF THE NETHERLANDS:
AN EPR STRATEGY AS PART OF POLICY FOR SUSTAINABLE DEVELOPMENT

In 1989 NEPP 1 (the National Environmental Policy Plan), established the ***overall goal***: "to maintain the carrying capacity of the environment in order to achieve sustainable development."

This goal was supported by ***specific objectives*** divided into eight themes: climate change, acidification, eutrophication, toxic and hazardous pollutants, waste disposal, disturbance, water depletion, and resource dissipation. Target groups were identified and, working with the government, were asked to assume responsibility for planning and implementing the necessary actions to achieve the objectives.

In the area of waste disposal, target groups comprised of stakeholders developed ***action plans*** establishing prevention and recycling targets, and defining the future limits of land disposal.

Covenants (voluntary agreements) were developed by some target groups identifying actions the industry would take, including such actions as evaluation of the environmental impact of alternative materials for production across the life cycle of a product, taking back and managing wastes associated with post-consumer products in the sector, and designing products for easy disassembly and recycling.

These actions on the part of producers are supported by ***government measures***, for example: tax on landfilling to more accurately reflect the associated environmental cost, and declarations making voluntary actions agreed to by a majority of a target group binding on all its members to ensure the competitiveness of more environmentally proactive players.

THE CASE OF GERMANY:
EVOLUTION FROM WASTE MANAGEMENT POLICY TO CLOSED SUBSTANCE CYCLES

EPR began in Germany as a strategy to ***internalise waste management costs*** in products, thus providing a strong incentive for waste prevention and minimisation.

Following several years of experience, the strategy was ***incorporated into an overarching policy emphasis on closed material cycles***.

Legal authorities for EPR were strengthened in amendments to national legislation, which also placed a new emphasis on product design for recycling and development of markets for recycled materials as a vital step in closing the materials loop.

EPR and Municipal Waste Management Policy. As the remainder of this paper focuses primarily on waste management applications of EPR strategies, a brief overview of the context in which such applications have developed is provided.

Waste management policies in OECD countries seek to reduce environmental impacts of municipal wastes using five basic approaches: prevention of waste at the source, re-use of products, recycling of materials, recovery of energy when incineration is employed and environmentally sound management of residuals not amenable to the other approaches. Since it has become increasingly difficult to site final disposal facilities throughout the OECD area, and since some OECD countries have, in fact, limited space available in which to do so, the need to make progress using the remaining approaches has become increasingly urgent. Promoting prevention, re-use and recycling among consumers has met with some success over the last twenty years. Potential gains are not yet exhausted, but are limited by a number of factors beyond the control of the consumer. Progress that has been made has been expensive for local authorities and has involved them in new responsibilities, such as marketing secondary materials, for which they have little training or experience. Using the traditional models of waste policy, neither the consumer nor the local authorities are positioned to secure waste reduction at the product source, nor to exert substantial influence on product design factors that influence the susceptibility of the product to recycling at the end of its life.

Adopting EPR as a strategy has provided an opportunity to engage producers in municipal waste management for the first time. By making producers responsible, in differing degrees, for the post-consumer management of products, policy-makers hope to promote changes in production that will prevent waste at the source, encourage re-use of products, simplify recycling through design measures, enhance markets for secondary materials, and ensure the development of technologies and plant capacity for materials recovery as needed.[1] Most importantly, policy-makers anticipate a source of funding that both ameliorates a difficult situation for local authorities and ensures that post-consumer environmental impacts are considered in the overall price of goods. Whether the reach of such a strategy begins at the manufacturing stage or reaches further back into the life cycle to include natural materials extraction depends on how the particular programme is structured.

[1] Table 2 identifies potential actions for each of the actors involved. In some cases the role of government may be to take action to stimulate or require action on the part of others; in other cases it may be to act directly, as a consumer.

III. QUESTION TWO: WHAT IS THE CURRENT DOMESTIC SITUATION, THE REGIONAL VARIATIONS, AND THE IMPLICATIONS OF THE VARIATIONS?

A clear picture of the current domestic situation as it relates to the issue to be addressed will serve several important functions. It will:

- o provide a baseline against which progress toward goals can be measured;
- o identify particular targets of opportunity;
- o clarify the point(s) at which intervention is needed;
- o provide the basis for initiating discussions with stakeholders; and
- o define the legal framework within which solutions must be designed.

Using, as an example, preventing and minimizing municipal (household and light commercial) waste in order to preserve disposal capacity, four components of the current situation are suggested for analysis, as follows.

The first component is an ***overview of municipal waste generation and management***, including:

- o current municipal waste generation rates, composition, and trends;
- o current waste management methods; and,
- o cost of current waste management practices.

Information gathered during this phase will identify potential targets of opportunity by revealing portions of the waste stream that are growing in proportion to the total waste generated. It will also identify significant components of municipal wastes that are not susceptible to EPR approaches (for example, yard and food wastes), for which other interventions may be considered. The existence and form of separate collection systems, an essential first step to recycling of post-consumer products, should also be examined. Where none exists for a particular waste stream of concern, costs of EPR may be higher than for waste streams already being separately collected, since collection and transportation costs generally exceed fifty percent of the cost of waste management. Assessment of regional variations in collection approaches and services, which are significantly affected by such variables as population density, distance to existing secondary materials markets, and localized cultural factors, can help to identify areas in which special approaches may be necessary to ensure successful implementation of increased recycling approaches. For countries in which incineration with energy recovery plays an important role in the general municipal waste strategy, it is important to consider the potential impacts of removing portions of the waste stream that may have a high fuel value, as doing so could lead to the need to introduce fuel to replace the heat value, thus increasing the cost of incineration and potentially altering the balance of environmental benefits.

Current costs of municipal waste management should be also considered, taking into account whether all the relevant costs (economic and social) are included in the price. Having traditionally paid for waste management out of the local tax base or grants from central governments, communities are moving very slowly toward systems (e.g., unit pricing, separate tax bill item) that fully account for costs in a way identifiable to the general public. **In addition to providing a baseline against which to measure options for EPR, accurate cost information can be useful in identifying actions to promote increased** understanding and responsibility at the citizen level, and to develop policies for government actions to support and harmonize those taken by producers.

TABLE 2

Examples of Potential Actions by Different Actors to Address Driving Issues

Goal	Producer	Consumer	Government
Prevent waste generation	Reduce materials use Design for durability	Give preference to low-waste products	Full pricing for waste management on unit basis Raw materials tax
Reduce final disposal			
(a) Encourage Reuse	Design reusable packages for products Develop specifications for used parts	Prefer reusables in the market place Find new uses for products not designed for reusability	Incentives for Deposit-Refund Schemes
(b) Encourage Recycling	Design for Recyclability, e.g.: - Mark plastics - Reduce numbers of materials used Use recycled materials in production Promote reverse distribution schemes	Demonstrate preference for products that are recyclable Participate in separate collections	Mandate recycling target rates and dates Support R&D and/or commercialization of new recovery technologies, e.g.: - tax incentives - subsidies - direct government research Provide technical and/or financial assistance to local authorities Preferential Purchase of Products made with recycled materials Establish eco-labels to inform consumers of product attributes
(c) Treat to Reduce Volume	Avoid use of inputs causing problems in incinerators		Incineration Policy: waste to energy -- recycling or not?
Internalise waste management cost	Product take-back		Advance Disposal Fees: -Point of purchase or -Entry to distribution system Unit pricing for waste services

The second component of the analysis of the current situation considers the existing infrastructure for recycling and the market for the secondary materials recovered from the product categories identified as targets of opportunity in the first stage of the analysis. Where waste management is priced to include all appropriate costs and there is no existing system for separate collection, it is very likely that one or more of the following conditions exists:

(a) there is no market for the materials that could be recovered;

(b) the market for the secondary material is so unstable that the material is either not collected or can only be collected and stored pending changes in market conditions;

(c) the product is designed and/or distributed in a way that makes it unprofitable to prepare it at the post-consumer stage for the secondary materials market;

(d) there is no technology available for recycling the materials from which the product is made; or

(e) there is inadequate capacity available for recycling the materials on a national or regional basis.

Understanding which of these conditions exists will be important when tools are evaluated for addressing the situation, including establishing conditions for industry organisations acting on behalf of individual producers. Recycling technology, capacity, and secondary material markets must be in place before the system can begin to function smoothly, assuming products that are amenable to recovery and recycling.

The third component to be examined is the structure and composition of the industry chain which creates the products chosen as the focus of consideration. At this stage, one will need, at least temporarily, to develop a tentative definition of which "producers" would be covered if an EPR strategy is selected. Most OECD countries have used a very broad definition, with the most significant difference being whether the part of the chain responsible for the raw materials extraction phase is included. ***The numbers, composition, and economic condition of the parts of the industry chain can be used to identify important stakeholders and to develop a strategy for involving them in discussions of the further development of the programme.*** Other important considerations in how to approach the stakeholders for input are the existing relationships among members of the chain, and the existing relationship between each segment of the chain and the government authorities. Some parts of the chain may, for example, require environmental improvements in their existing operations in addition to more support and oversight if they are to achieve the level of responsibility implied by EPR. Other actors may have an existing open communication chain with the authorities, or even have entered existing agreements with the government to foster environmental improvements. If so, a record of achieving mutual goals may be important to identifying the best approach to achieve additional goals.

In addition to identifying the chain of producers for which a communications strategy must be developed, other important stakeholders must also be identified, and a strategy prepared for involving them in the dialogue on how to achieve the optimum EPR programme. If the approach being considered involves, as is frequently the case, substantial increases in recycling rates or introduction of new deposit-refund schemes, then consumer groups will certainly be an essential actor in the process. If local authorities have not already been significantly involved in the discussions of baseline conditions and industry analyses (as would be preferable), they should certainly be involved at this stage, and in a central advisory role.

The final component of the baseline analysis is the legal context within which solutions must be developed. Where specific legal authorities for imposing post-consumer product responsibilities on producers do not exist at the national level, decision-makers will be forced to decide whether to initiate

development of new legal authorities and craft an implementation approach dependent upon receiving the new authorities or to follow a strategy led by voluntary approaches. In crafting new authorities or examining the existing producer responsibility authorities, decision-makers should also give attention to other government institutions and laws not related to the environment which may impact programme design and implementation. These include domestic competition law and policy, as well as laws and policies governing the administration of government programmes based on user fees, product charges, and taxes. The analysis of the legal context can be supplemented beneficially with consideration of the existing institutional relationships among the various departments of government that will need to be consulted during strategy development. This is the stage at which to initiate internal discussions regarding the extent to which national authorities can or must be involved in the administration of duties which will be assigned to producers.

In addition to examining legal authorities at the national level, it will be useful to evaluate the flexibility available to local authorities to adapt to a national EPR strategy. Over the last decade OECD governments have moved to privatize waste management. As a condition of contracts with waste service providers, local authorities may be required to maintain specific minimum deliveries to an incinerator or landfill facility or face increases in costs, in addition to being required to allow waste to be delivered to local facilities from other areas. ***Under these conditions if substantial amounts of waste are diverted over short time-frames, final disposal costs could increase and final disposal capacity would not be saved. Even absent such contractual constraints, if significant portions of the waste stream are removed from final disposal, reduced demand for capacity may lead private operators to reduce landfill or incineration costs in order to attract business needed to maintain profitable operations.*** These types of constraints may substantially influence the attitudes of local authorities regarding national policy decisions.

Analysis of the baseline conditions, then, identifies potential targets of opportunity, provides the basic understanding of the production chain necessary to begin a dialogue with stakeholders, and identifies the baseline against which to evaluate progress.

IV. QUESTION THREE: WHAT IS THE INTERNATIONAL DIMENSION IN RELATION TO THE DOMESTIC SITUATION?

Policies or initiatives taken at the international level may influence domestic policy decisions. As an example, the importance of the policy implications of EU Directives on wastes for EU member countries is self-evident, but there are also implications for non-EU countries that have substantial trade interests within the EU. It is too early to determine the potential effect of the EU Packaging Directive on EPR in general or on packaging within the EU in particular. EPR approaches are not mandated, and limitations are placed on countries which wish to exceed the suggested recycling targets. Individual differences in countries' approaches will mean that the significance of the Directive will emerge only slowly, over time. One can expect, of course, a substantial increase in the packaging materials finding their way to secondary materials markets. An early discussion of how markets could be impacted could be of benefit to OECD countries.

Several OECD Council Acts address issues underlying or related to the development and implementation of EPR strategies in member countries, though there has been no formal action on EPR per se. Even absent formal policy statements or initiatives by these and other international bodies, the continuing emphasis by enterprises on international marketing of products and the increased attention being given to the relationship between international trade and environmental policies argue for close attention to developments in countries that are important trading partners. Three Appendices to this paper provide an overview of the activities being undertaken in the OECD countries in relation to EPR, and may serve as a useful starting point for analysing the international situation. ***Government actions in the field of EPR are evolving rapidly. It is essential for OECD countries to maintain an ongoing dialogue about developments in a forum that invites the views of government, industry, and other stakeholders.*** For

Member countries one of the best sources of information about very recent activities may be the industry chain itself, which has, by necessity, maintained a close watch on developments around the world.

Analyses of the international situation can be expected to clarify the existing situation of domestic producers, identify pending changes outside national authorities' control, describe alternative actions to address a particular problem, and provide an opportunity to learn from the experiences of others. Domestic factors will, of course, remain of highest priority.

V. QUESTION FOUR: WHAT ARE THE VIEWS OF THE MAIN STAKEHOLDERS ON THE ISSUES OF CONCERN, AND WHAT TARGETS DO THEY CONSIDER ACHIEVABLE?

Decision-makers will need to develop a strategy for establishing an open dialogue with stakeholders covering all major issues. Existing mechanisms for consultation vary by country and by situation, ranging from informal conversations with well-known experts in a field, through roundtable discussions and workshops, to formal public hearings. Although consultations frequently include public interest groups, employee associations, and other levels of government, existing mechanisms tend to focus on the potentially-affected industry sector. Consultations with citizen groups and local authorities, in particular, are essential for EPR strategies, not only to develop a clear understanding of their concerns and viewpoints regarding the possible role of producers in waste management, but also to reach an understanding and agreement about their own.

An understanding of the views and circumstances of each part of the product chain will be needed before final decisions are made regarding recycling targets and identifying the producers responsible. Such an understanding is particularly important for setting parameters within which industry associations collectively can fulfil the responsibilities of individual producers and for ensuring an equitable distribution of responsibilities and costs. Cross-sector discussions among the enterprises are likely to be stimulated early in the discussion of EPR strategies, and may continue after the government consultative process has ended. Such discussions may have important implications for the future as each part of the chain develops a better understanding of the needs and problems of the others.

Many governments begin by requiring the industry chain to develop a proposed EPR approach. Such a requirement means that the government must communicate the problems requiring solution, the parameters within which a proposal must be framed, and the time-frames for developing the proposal and achieving the environmental goals. In order to allow opportunities for participation of all stakeholders it may be useful to convene a meeting to announce the concerns the government intends to address through the strategy, the schedule for doing so, and the major considerations for evaluating options for action. Such a meeting would ensure that each group obtains the same information and has the same amount of time within which to work toward defining its own ideas about the programme to be developed.

If time is available, policy-makers may wish to meet with each of the stakeholder groups individually, counting different parts of the industry chain as different stakeholders for this purpose, and initiating such meetings after an adequate time has passed for each group to have internal discussions. The individual meetings could usefully focus on:

(1) the current role of the group in the chain and its current waste management practices;
(2) perceived obstacles to achieving waste prevention and increased recycling within the group;
(3) special concerns of the group as it considers assumption of additional responsibilities;
(4) views of the group on the feasibility of the stated objectives;
(5) potential role of the group in achieving the stated objectives; and
(6) identification of any additional stakeholder groups that might usefully be consulted.

Such meetings can provide policy-makers with a deeper understanding of the operations of a particular sector, as well as the specific issues it faces. This information, in combination with the baseline analysis done, may become very important if the industry chain is unable to reach a consensus proposal and the government is called upon to make crucial decisions, such as the allocation of new costs among affected parties. In the case of local authorities and consumers, the meetings can also provide an indication of what will be necessary to obtain the full support of these groups for the approach that will be developed, and a vehicle for communicating the importance of the new responsibilities they will also assume in implementing an EPR programme. If time does not permit individual meetings, the questions should be examined to the extent possible during larger group meetings.

Based upon the information obtained in the stakeholder meetings, and on any industry (or other stakeholder) proposals received, the policy-maker will need to make a judgement about the acceptability of various alternative courses of action, taking into account minority views. ***The extensive consultations needed to ensure all views are heard and implications understood means that the time required to develop EPR strategies is often longer than that necessary for developing ordinances using established procedures.*** Consultations and development of policy proposals that extend through the full production and distribution chain take considerable time, as demonstrated in the examples below. Authorities should plan accordingly.

- At the beginning of December, 1993, French authorities invited an industry expert to produce recommendations on end of life electronic products; following extensive consultations with producers, distributers, associations, recyclers, consumers, and local authorities, a report was submitted in late November, 1994. The authorities and the industry signed a voluntary agreement in the second half of 1995.

- The final report of Britain's Producer Responsibility Group (PRG) on a plan for recovering 50-75% of packaging by 2000 was published in November 1994. The challenge to develop a plan was delivered by the authorities during 1993. Also during November 1994, the Environment Bill was introduced to provide broad enabling powers for the government to impose producer responsibility. Both the report of the PRG and the Environment Bill are still under consideration as of January 1996.

Obtaining stakeholder input will ensure that all points of view are considered and that the expert opinions of those within potentially-affected industries are tapped. Hearing discussions among the stakeholders may prove more illuminating than hearing individual presentations when final decisions are being made.

VI. QUESTION FIVE: WHAT ALTERNATIVE MEASURES ARE AVAILABLE TO ACHIEVE THE GOALS, TAKING INTO ACCOUNT THAT A COMBINATION OF MEASURES MAY BE DESIRABLE?

Environmental policy tools can be divided into three major classes: direct regulation, economic instruments, and suasive instruments. The same basic set of tools is available to policy-makers whether or not they adopt an EPR strategy. While economic and suasive instruments are the generally preferred tools of OECD governments for environmental policy, most that have adopted EPR strategies use them in combination with direct regulation. This section begins by examining the application of the different instruments to EPR strategies. It closes with an examination of the roles and responsibilities assigned to actors outside the "producer" category to support EPR strategies.

A basic premise of the EPR concept is the internalization of environmental costs, thus implying the use of economic instruments, however, no single economic instrument has been used in isolation as the foundation of such a programme to date. Deposit-refund schemes marked the beginning of the evolution towards fully-realized EPR strategies. Only Belgium has attempted to implement EPR partially through

the use of a specific economic instrument (the eco-tax). In this case, however, implementation delays and technical difficulties have prevented any meaningful measures of performance to date. The Belgian scheme provides an important choice for the producer: pay the tax or achieve, in cooperation with the relevant industry chain, a specified recycling rate. While choices are made available to producers in other EPR strategies, no other strategy has provided a choice regarding achieving specified recycling rates. Such an approach may not be acceptable to governments if EPR is a key element of the national waste management strategy. Its potential impact on the environment will depend on how closely the amount of the taxes compares to the costs for enterprises to achieve the specified recycling targets, and how the revenue generated is spent by the government.

If a threshold decision has been made regarding the basic philosophy of EPR as an essential component of the policy framework, the decision-maker must focus on establishing either a regulatory or a suasive approach. Either can be used in conjunction with one or more economic instruments directed at specific policy preferences.

Direct Regulation. Most governments using a regulatory approach have set three framework conditions for producers: (1) specific prevention and/or recycling targets and time-frames; (2) responsibilities of each individual and conditions under which such responsibilities may be transferred to an industry organisation; and (3) other requirements important to the overall strategy of the policy-makers (e.g., establishing a percentage of market share that must be retained by reusable products).

Direct regulation offers certain benefits, among them an unambiguous assignment of responsibility that will lead to the timely achievement of concrete targets. However, its detractors posit that decision-makers are insufficiently sensitive to the costs of compliance and, in some cases, question whether the environmental benefits merit the costs, considering the life cycle of the product. The negative aspects of such approaches can be tempered using a variety of measures: extending the time period over which rates must be achieved; carefully considering the role of energy recovery in establishing targets; and related government interventions to assist in research and development or commercialization of needed recycling technologies and to help establish or expand markets for the secondary materials produced.

Direct regulation may also be used as part of a combined strategy to complement voluntary measures by enterprises. The primary reason for this complementary use of regulation is to ensure that industry-initiated solutions to achieve targets apply equally to all producers. This approach is used in the Netherlands, for example, to ensure that a fee will be paid at the point of purchase for vehicles so that they will be recycled at the end of their useful life.

Suasive Instruments. Voluntary agreements have been negotiated throughout the OECD area to advance a variety of environmental goals, including, for example: reducing toxic constituent content in products; product take-back and recycling; and product re-design for durability or recyclability. France, after completion of the packaging ordinance, appears to have turned its future hopes for EPR to voluntary approaches. An agreement with the chain of producers and recyclers handling end of life vehicles was signed in 1993, and the government expects to sign another voluntary agreement with producers and recyclers in the electric and electronic goods chain in the near future. Other governments having a long experience and history with voluntary agreements in the 1980s (e.g., Germany), have concluded that they are inadequate to achieve the desired transformation of traditional thinking on waste and resource management within an acceptable time-frame and have chosen to implement EPR using a regulatory-based approach. ***Some key factors in achieving success with voluntary agreements have been posited in previous OECD analyses: a limited number of key players, and a credible regulatory threat absent achieving an agreement. The latter factor argues for a time-limited evaluation of whether parties to the negotiated agreement are achieving their commitments, and a commitment by the government to initiate unilateral action if adequate progress toward goals is not being made.***

Voluntary agreements or non-binding guidelines may be particularly useful to increase consumption of secondary materials in order to improve markets for recyclables. If imposed on imported goods, secondary material content requirements could pose problems in the area of international trade. If imposed on domestic goods through regulation, the competitivity of domestic firms could suffer compared to their foreign counterparts if substantial capital investment is necessary. On the other hand, commitments to the accelerated use of secondary materials over a time-frame that allows for investments necessary in the physical plant could greatly aid in stabilizing costs of recycling.

Economic Instruments. The OECD has published a variety of reports which provide examples and insights into the use of economic instruments. A set of specific evaluation criteria for economic instruments is suggested in a 1993 OECD publication, Applying Economic Instruments to Packaging Waste[2] (see Table 3). Though economic instruments have not provided, the basic foundation for EPR strategies to date, they are often used in conjunction with EPR strategies based on regulation and/or voluntary approaches to emphasize certain policy decisions. To a large extent, EPR strategies can be seen as having evolved through the development and use of economic instruments on a product- or material-specific basis. The categories of economic instruments that have been applied to EPR most frequently are product charges, eco-taxes, advance disposal fees, and deposit-refund schemes.

OECD Council Recommendation C(78)9(Final) states that maintaining or introducing systems of refillable containers covering as much of the beverage trade as possible is one of several important actions that can be taken to reduce waste generation and encourage recycling, thereby minimizing the social costs of beverage distribution systems. Its implementation, using ***deposit-refund schemes***, has expanded beyond its original target, glass bottles, in recent years, to include plastic bottles and aluminum cans in some countries. Return and reuse rates have been, and continue to be, high under deposit-refund schemes. Many governments are including stipulations favouring continuation or expansion of existing deposit-refund schemes as they move toward a broader-based EPR strategy, especially for packaging. This preference may be expressed as a regulatory requirement that a certain percentage of the beverage container market be retained by containers that are part of a deposit-refund scheme, or as exemptions of containers subject to a deposit-refund system from all new requirements. Other products are being considered for deposit-refund schemes, including batteries.

Product charges are also a common instrument in the history of the development of EPR strategies. The guiding principle for product charges, as for environmental taxes, is that they should be imposed as close as possible to the source of the environmental effect being addressed. Thus, if the intent is to influence the manufacturer's choice of materials, apply a "materials tax". If it is to influence the consumer's choice in favour of products made of more easily recyclable materials, use a "product charge" applied at the point of purchase. Product charges have been levied on specific types of beverage containers, shopping bags, car tires, light bulbs, batteries, and assorted other products. Important features to consider when designing product charges include: (1) whether the charge is set so as to provide an incentive to discourage the use of the product or material it is made from, or only to pay the cost of some heretofore unpaid externality (for example, waste management costs); and (2) whether the revenue received should be earmarked to address the problem raised by the product IF the government has both authority and sufficient consensus among the various branches of government to earmark revenues for specific uses.

Though some economic instruments have been created to provide alternatives (for example, pay a tax or achieve a specified recycling rate), most simply specify the cost for certain activities (for example, an emissions tax or product charge). ***If governments choose to base a comprehensive EPR strategy on economic instruments, they will need to be willing to accept a significant new administrative burden as well as acknowledge that "payment" is an adequate demonstration of responsibility.*** It may be easier,

[2] An older, more detailed analysis of the application of economic instruments to packaging waste is the subject of OECD Environment Monograph Number 82, which focuses primarily on the use of product charges and deposit-refund systems.

and possibly cheaper, for an enterprise to pay the tax than to meet the recycling requirement -- responses will differ within an industry as well as across industries. The amount of the tax in relation to recycling costs will determine the likely incentive effect of the tax.

Deposit-refund schemes and other economic instruments that have been applied with success in the past should be carefully evaluated as EPR approaches are considered. Will the particular measures be continued absent government intervention, and is their continuation sufficiently important, in the view of the decision-maker, that their continuation should be assured? Can the requirements of a regulatory form of EPR (e.g., producers must recycle 65% of the waste from the post-consumer product) be usefully supplemented by economic instruments (e.g., an eco-tax on a material that the government considers less preferable)? ***The possibility of introducing EPR measures that will be counteracted by existing policies can be reduced by reviewing instruments designed to implement EPR strategies in relation to existing sector based environmental policies to identify complementary and conflicting policy signals.*** If EPR strategies call for dramatic increases in paper recycling at the same time that tax incentives for logging are offered, for example, it will be difficult to increase the secondary paper market to support the new recycling target.

VII. MEASURES APPLIED TO ACTORS OTHER THAN PRODUCERS

To date the actions of other actors (i.e., national and local authorities, consumers) have not played a prominent role in EPR strategies. A well-designed waste prevention and minimisation programme, whether or not based on an EPR strategy, needs to address the roles and responsibilities of all the actors involved, especially when aggressive targets are set.

Perhaps the single strongest incentive governments can provide to foster achievement of waste reduction and recycling at the household level is unit-based pricing for municipal waste. Pricing, whether based on volume or weight, that demonstrates a direct connection between wastes destined for final disposal from a household and the amount charged for waste management by local authorities provides a powerful incentive for individuals to both reduce waste and to separate as much at source as possible for recycling. Even where producers have assumed significant new responsibilities across all phases of the life cycle of their products, consumers should also assume responsibilities where they can affect goal achievement. Some local and/or national authorities hesitate to impose such a scheme based on concerns that illegal dumping might increase. Over 1,000 communities in the United States have implemented such schemes, and many have found illegal dumping to be less of a problem than anticipated. They have been able to combat effectively such problems with effective public education programmes.[3]

Local authorities will continue to be involved in managing municipal wastes, with or without EPR strategies, and will provide an important feedback loop for national authorities regarding the effectiveness of the strategy's implementation. They may also continue to be involved in or wholly responsible for separate collection of post-consumer products to be recycled. Japan's new packaging ordinance, for example, establishes the responsibility of producers for recycling wastes after they are collected by local authorities. In many countries, proponents of a variety of EPR approaches that can be applied to electric and electronic goods are suggesting that local authorities will need to continue to provide a location for accumulating such wastes even if they do not provide a pick up service. ***In addition, local authorities' knowledge of the community makes them best suited to design campaigns to stimulate and maintain citizen participation.***

[3] Extensive discussions of the elements of effective unit-based pricing schemes, the steps in developing and implementing one, and lessons learned from the experience of communities that have done so are included in a useful publication from the U.S. Environmental Protection Agency entitled Pay-As-You-Throw: Lessons Learned About Unit Pricing.

National authorities can play an important supporting role by ensuring that government purchasing policies not only permit, but also favour products containing recycled materials, and by encouraging others to do the same. The impact of such policies on creating and expanding markets can be significant given the portion of some products purchased by governments. ***National authorities should also consider providing support, financial or otherwise, for research and development or commercialization of technologies and plants needed to process secondary materials.*** Such support can take a number of forms, ranging from direct research and development conducted by the government, to funding private efforts using grants, to providing tax incentives to make private action attractive to the industry.

The tools available to governments for implementing environmental policy have not changed. It is, rather, the strategy used to employ them that has shifted. Much of the choice of tools will be based on cultural preferences.

VIII. QUESTION SIX: HOW CAN ONE ENSURE THAT IMPLEMENTATION MEETS NATIONAL GOALS WHILE MAINTAINING DOMESTIC AND INTERNATIONAL COMPETITION?

Most EPR programmes encourage cooperative activities on the part of domestic industries in order to manage post-consumer waste. Questions have arisen regarding how far such cooperation can go before it threatens to violate domestic competition laws. EPR programmes also change the conditions for entry of products onto the market by requiring producers to assume responsibility for the products at the post-consumer stage. In international fora, questions have arisen with regard to whether such programmes pose discriminate against foreign goods, pose technical barriers to trade, or impose costs that are out of proportion to their intended environmental goals. Furthermore, aggressive recycling goals may have international impacts on secondary materials markets so that one country's EPR programme may have impacts on another's ability to maintain existing recycling programmes using its own recycling capacity. These issues are discussed below. Domestic competition is taken first, with a special focus on the relationship between industry associations that seek to fulfil responsibilities that would otherwise fall on individual producers ("industry exemption schemes" as they are known) and the existing recycling infrastructure. A brief discussion of competitivity (in the international marketplace) follows, and the section ends with a discussion of international trade issues that have been raised.

Domestic Competition. Industry organisations formed to fulfil responsibilities that would otherwise fall to individual producers ("industry exemption schemes") have played a central role in implementation of EPR strategies to date. Policy-makers' decisions regarding authorization of such organisations, the actors allowed to participate in them, the responsibilities assigned, and the conditions set for fulfilling responsibilities are therefore central to the outcome of the strategy.

Authorizing a single association to operate nationwide, effectively without competition, has been the subject of considerable policy debate. To date, organisations dealing with packaging wastes from households have been allowed to do so, though they may be required to obtain approval from subnational authorities before commencing operation. Where more than one such organisation exists in a country, the organisations tend to serve different segments of the producers' markets. One may concern itself only with post-consumer wastes, the other with wastes from commercial or institutional sources. In the case of firms that guarantee, on behalf of industry exemption schemes, that recycling targets will be met, organisations tend to be material-specific. For example, in France, Adelphe handles only glass packaging and Cycla-Med handles expired medications and medications packaging. In Germany, however, transport packaging is handled by several competing organisations. ***Most governments and producers appear to have concluded that for purposes of handling post-consumer products from non-commercial sources, competing organisations may not be necessary to ensure lowest operational costs and prevent direct restrictions on competition.*** In some cases purely practical considerations may be primary, e.g., the organisation

TABLE 3

EVALUATION CRITERIA FOR ECONOMIC INSTRUMENTS

(1) Environmental Effectiveness (considering the stated goal, but also considering impacts in other areas)

(2) Economic Efficiency (total resource requirements)

(3) Scope and Effectiveness of Economic Instruments Compared to Command and Control Approaches

(4) Equity, Distributional Effects (national and international)

(5) Administrative Feasibility and Costs (a subset of the economic efficiency criterion)

(6) Concordance with Institutional Frameworks (national and international)

(7) Acceptability

(8) Adjustment Costs Involved with Transitions

Source: Applying Economic Instruments to Packaging Waste, OECD, 1993

responsible for administering the deposit-refund scheme for PET bottles in Sweden may remain the only one because there is not an adequate flow of materials to support a competing organisation.

With regard to participation, waste management firms, including recyclers, are generally excluded from decision-making bodies because of the potential for price-fixing during the negotiation of recycling contracts. Other than waste management firms, however, no constraints have been placed on such participation. Some industry exemptions schemes include participation by local authorities, while others do not, though most have developed, at a minimum, consultative arrangements with these key authorities.

The responsibilities of industry exemption schemes vary, but generally fall within three main categories: (1) those that must collect wastes and ensure recycling, (2) those that must ensure recycling, and (3) those that must reimburse local authorities for expenses associated with recycling. Development of case studies and methods to compare the performance of strategies using organisations that fall within the three categories represented, and others that may be considered, would be very useful.

Organisations required to collect recyclables (category one) are generally precluded from charging a direct fee for doing so, and are expected to distribute costs among producers who will incorporate those costs into product prices. The cost of collection may be higher or lower than comparable collections carried out by local authorities, depending upon the mix of curbside and bring systems used. ***There is a potential in such systems for conflicts between the industry organisation and local authorities regarding the adequacy of collection efforts, particularly where pre-existing separate collection systems are found.*** Issues related to contracting for recycling under the first case do not differ substantially from those associated with systems which only require organisations to ensure recycling, so are not considered separately here.

When industry exemption organisations are required to ensure recycling of materials collected (categories one and two) they may control the flow of a significant portion of the municipal waste stream. The extent of the effects of controlling the flow depends largely upon their relationship with the existing recycling infrastructure. At the outset industry exemption schemes will contract for recycling services they are required to ensure, since such operations are outside the realm of routine activities of producers in all but a few cases, such as the aluminum industry. Whether they enter directly into recycling businesses as they develop will largely depend upon the operating conditions set by government policy.

During the analysis of the baseline conditions, the existing infrastructure for recycling was examined. If there is adequate domestic recycling capacity for the wastes to be collected, then a decision will need to be made regarding whether (a) recyclers will be required to accept all the materials offered by the industry association, and (b) the industry association will be required to deliver all the materials to the existing recyclers. If increased supplies to markets available for recycling outputs can be absorbed, costs associated with investments in infrastructure can be avoided by mandating both (a) and (b). Under other conditions, alternatives include exporting wastes for recycling (potentially increasing costs and raising other policy implications), investing in additional domestic recycling capacity (requiring a determination regarding whether industry exemption schemes themselves can make such investments), or establishing alternative recycling targets based on existing recycling capacity.

If adequate recycling capacity exists, the methods used to let contracts for recycling require careful scrutiny. While a centralized organisation controlling the flow of recyclables can exercise considerable power during negotiations to bring recycling costs to the lowest achievable level, centralized contracting may not recognize important regional differences and may encourage a reduction in the number of firms conducting recycling operations over time. Such changes can be expected to favour large firms.

Where adequate domestic recycling capacity does not exist, waste exports will be the only alternative available in the short term. (The length of time required to plan and develop additional recycling capacity would appear to render unwarranted the actual economic and potential environmental costs of separate collection and storage pending the availability of new domestic capacity.) Potential impacts on international markets for secondary materials can cause conflicts between governments, and the political ramifications of waste exports can be significant. These concerns need to be considered in developing domestic policy and continued discussions are needed in international fora.

Developing new domestic recycling capacity will require considerable investment, as well as time to come online. Competition authorities have, to date, taken an unfavourable view of direct investments in recycling firms by industry exemption schemes. If new recycling capacity were likely to be a profitable investment considering markets for the output, however, it would have developed in the absence of government intervention. In these cases the investments required to develop new capacity are most often recovered by charging producers for recycling rather than pay for delivery of recyclables. This means that producers pay for the investment but are denied the eventual return, assuming returns develop. During the time required to develop new capacity (if exports are not allowed or are not feasible), producers may be required to store wastes, an additional cost that must be paid to achieve government goals.

Industry exemption organisations that are required to pay the difference between the costs to local authorities of collection and transportation of secondary materials to recyclers and the income received from doing so (category three), have little real influence on the amount of waste collected and recycled. The influence they do have will be purely suasive, and how vigorously they apply it may depend upon the extent to which they will be held accountable for achieving the targets set by the national government. Such organisations, however, will not raise the same questions regarding effects on competition in the recycling infrastructure that are raised by organisations that contract directly for recycling.

In addition to the cost of recycling contracts, industry exemption schemes incur startup and operational costs, including, for example, legal fees for incorporation, membership drives, and investments in equipment if the group is to physically collect and/or process the wastes. Continuing operation costs include establishing an accounting system to set and administer participation fees, developing and maintaining information systems to provide information required by national authorities, public education efforts, and routine business overhead costs. There is a keen incentive for such schemes to succeed, since absent an industry-wide scheme, individual producers would be required to operate individual take back programmes. In most cases such an outcome would result in duplicative, cumbersome arrangements if, indeed, they would be workable at all. ***Governments should establish oversight bodies to ensure that the costs incurred in such operations are well-controlled, since such costs are passed directly to the consumer.***

Competitivity. The issue of potential effects of EPR strategies on the competitivity of domestic industries vis-a-vis those of the country's trading partners has been raised. This familiar concern has more to do with the cost of achieving compliance with environmental requirements in general than it does with EPR strategies in particular. Since most EPR strategies make adjustments to ensure that imported goods comply with the same strict standards and to exempt exported products, the relative position of domestic industries in domestic markets or other markets influenced by other EPR strategies should not be directly affected. ***The potential for such impacts does exist where more stringent environmental controls relating to manufacturing and recycling processes are imposed simultaneously with an EPR strategy.*** This potential is highest where the goods are competing in markets where environmental controls are markedly less stringent; this is not likely to be a significant factor within the OECD area. The cost of compliance with environmental standards is only one of numerous factors influencing decisions of businesses regarding their place of operation, and may not be among the most significant. Analysis by Robert Repetto[4] suggests that few businesses have abandoned operations strictly in response to enhanced environmental protection standards, and that the more important issue related to environmental spending is whether the spending is leading to significant improvements in environmental quality.

International Trade. Much of the information available at this time on potential trade impacts of EPR strategies is theoretical. Further discussion of the issues and development of case studies could provide important information to decision-makers in OECD countries. In July 1993, participants in an OECD workshop on Life cycle Management and Trade examined issues directly related to extended producer responsibility. The report of this workshop may, therefore, be of special interest to decision-makers considering EPR approaches.[5] Some of the main findings of the workshop are presented here, augmented with observations obtained during the interviews conducted for this project.

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[4]See Robert Repetto, Jobs, Competitiveness, and Environmental Regulation: What are the Real Issues? published by World Resources Institute, Washington, D.C., March 1995.

[5] Copies can be obtained from OECD publication centers (Life Cycle Management and Trade, ISBN 92-64-14148-0, July, 1994, 204 pp.). Particular panels of interest included: Trade Implications of Eco-Packaging, Trade Implications of Recycling, and Policy Approaches for Reconciling Trade and Environmental Concerns.

In the framework of international trade, requirements for reuse and/or recycling post-consumer products are interpreted as product standards. Under GATT rules, product standards:

1) must not discriminate between imported goods and those manufactured domestically;

2) must not increase the difficulty of market entry by foreign competitors (i.e., must not be technical barriers to trade); and

3) must not impact the cost and competitiveness of foreign goods compared to domestic goods except in proportion to the environmental benefit anticipated as a result of the requirement.

Special concerns raised by dramatic increases in the rate of collection and recycling of secondary materials as EPR strategies are implemented are: 1) upsets in secondary materials markets brought on by an excess supply (which also can be a problem on the domestic level); and 2) policy and political constraints concerning waste exports within and outside the OECD area.

Discrimination. To date there have been no formal complaints of discrimination based on EPR strategies. Existing EPR programmes appear to avoid the problem of explicit discrimination against foreign products by applying collection and recycling requirements to both domestic and imported goods, while exempting exported goods. Implicit discrimination poses a potentially greater problem, since domestic enterprises have a greater opportunity to influence national policy-making, and national policy is likely to consider domestic products and conditions, which are chosen according to national preferences, more fully than those outside its borders. For example, if an industry exemption scheme fails to provide an outlet for particular types of packaging that is used by exporting countries but not by the domestic producers, that product may effectively be excluded from the market, or the importer of that product may be forced to operate outside the exemption scheme, which is generally conceded to be more difficult.

Principles of international trade, which allow national standards based on externalities associated with product consumption, do not support the imposition of requirements that affect the production process outside national borders. This distinction serves to reflect the right of national authorities to make independent decisions regarding resource utilization and domestic environmental impacts of production processes. ***Should governments decide to impose recycled content requirements for products as a way to expand markets for secondary materials, questions could arise within the context of trade rules.*** Voluntary agreements or regulations applied exclusively to domestic industries are less likely to raise international trade concerns if recycled content targets are to be adopted as part of EPR programmes.

Technical Barriers to Trade. Technical barriers to trade (TBT) may be caused by a proliferation of national schemes that affect persons marketing products internationally, by a lack of transparency of the policy (lack of consultation with trade partners during the process of policy development, monitoring and reporting requirements that may pose difficulties for foreign producers), or simply by a failure to provide adequate notice of new policies coming into effect. ***Most of these problems can be easily avoided by careful attention to the policy development process, which could be expanded to include early notification to significant trading partners, and realistic compliance dates following publication of new requirements. National authorities remain responsible for ensuring that actions taken by domestic industries, including those taken by industry exemption schemes, do not result in technical barriers to trade.***

Costs and Competitiveness. Because one of the main purposes of EPR is to incorporate waste management costs into products, ***every EPR scheme can be expected to raise direct costs of producers, though the increase is likely to be identical for domestic and foreign market entrants. Indirect costs, however, may be greater for foreign enterprises.*** Indirect costs also may be incurred in association with "voluntary" measures not required by the national ordinance/regulation, or the industry exemption scheme, but which are a de facto requirement of obtaining shelf space at sales outlets (such as use of a specified symbol to indicate participation in a take back and recycling programme).

Consideration of whether impacts on the cost and competitiveness of foreign goods are in proportion to the environmental benefit anticipated is a complex issue which is evolving slowly through rulings of international bodies charged with resolving trade disputes. ***International bodies charged with settling trade disputes lack established criteria for evaluating the proportionality of the trade effects of product requirements to their intended environmental benefits.***

Market Upsets and Exports Within the OECD Area. Dramatic increases in recovery of post-consumer wastes for recycling brought on by EPR strategies can be expected to exert a strong influence on secondary materials markets. If domestic recycling capacity is inadequate to meet the targets set in an EPR strategy, producers will have to export materials for recycling or wait for new domestic capacity to be developed. Provisions have not been made in EPR strategies to date for situations in which the capacity to recycle wastes is not available.

Exports of secondary material may, in some cases, create additional economic and environmental costs, mostly associated with transportation. In other cases, the costs may be equal. However, in most cases exports create political difficulties. While for practical purposes such exports are no different than exports of raw materials for manufacturing, a routine activity in the OECD area, the response is not the same. Some countries may wish to implement policies reserving recycling capacity for domestically generated wastes. ***This is a virtually unexplored potential trade consequence of EPR strategies that differs significantly from the concentration of discussions on the free movement of finished products.***

Effects on markets for secondary materials will be multiplied if several governments initiate EPR strategies simultaneously. Increased supply will bring reduced prices, which may ultimately reach a point at which the economic cost of recycling per unit of output exceeds the market price. At such a point decisions will need to be made concerning whether recyclables should or must be delivered to recycling facilities, and whether those facilities should or must accept them. Doing so will be to the financial benefit of neither producer nor recycler. In the past, competition authorities have intervened to prevent the delivery of secondary materials to recyclers at no cost, at least in international markets. When market outputs exceed the demand, environmental benefits are likely to become negative, considering the environmental impacts associated with collection, transportation, preparation, and recycling. Unlike routine fluctuations in market prices, changes associated with implementation of multiple EPR strategies within a region can be expected to be lasting, since the increased supply can be expected to be stable unless governments take one of two actions: revise recycling targets to reflect market demand or take dramatic action to increase end markets.

Secondary Material Exports Outside the OECD Area. In addition to exports within the OECD area, producers and guarantors for recycling materials may explore international markets for secondary materials outside the OECD area. In addition to greater economic and environmental costs associated with such exports, the political repercussions are often more severe than for exports within the OECD, and political considerations and emerging international rules may preclude such an option in the future.

The Basel Convention on the Transboundary Shipment of Wastes prohibits shipments of covered wastes between countries Party to the Convention and those that are not unless such movements are conducted under terms of a bilateral or multilateral agreement that meets the standards specified under Article 11 of the Convention. Most OECD Members are Party to the Convention, and therefore will be subject to limitations on shipments of covered wastes to non-Parties. While the scope of the Convention is limited to hazardous wastes and wastes from households, the classification of various wastes into these categories has proved difficult in most cases and controversial in many. Decision II/12, adopted during the Second Meeting of the Conference of the Parties to the Convention, and accepted as an amendment to the Convention during the Third Meeting of the Conference of the Parties, asks OECD countries to phase out exports of hazardous wastes to non-OECD countries by the end of 1997, and to prohibit them thereafter. Efforts to resolve classification of secondary materials that have traditionally enjoyed international markets and that are not considered hazardous wastes within most OECD countries have, to date, been inconclusive. Absent resolution of the classification issues, many OECD Members may make a political decision to limit

exports. While it is unlikely that such limitations will seriously impede OECD countries' ability to manage secondary materials collected through EPR programmes in the medium and longer term, some non-OECD countries may question whether "raw" materials needed to foster economic development are being withheld in the international marketplace if unilateral bans are imposed. Such bans could be considered discrimination under international trade rules.

General domestic competition issues and trade and environment issues have both been the subject of discussion within OECD working groups. To date, however, EPR strategies have not been a specific topic of such discussions. Outside the OECD, interest in the issues is also strong. The relationship between trade and environment will also be a subject of study within the committees set up by the WTO. ***It would be of considerable help in advancing these discussions if specific case studies could be carried out or working groups convened to provide concrete examples of how EPR strategies are impacting enterprises in these areas.*** Only when specific cases are identified and examined can progress be made toward generalized principles for ensuring that EPR strategies do not conflict with international trade rules.

IX. QUESTION SEVEN: HOW WILL SUCCESS BE MEASURED?

Both prospective and retrospective evaluation of the consequences of the particular strategy selected will provide an opportunity to predict and address unanticipated outcomes. Four fundamental questions are suggested for consideration:

(1) How does one assess whether objectives have been achieved?

(2) What are the environmental and socio-economic consequences of doing so?

(3) Does an analysis of costs and benefits suggest a need for modification of the strategy? and,

(4) How will progress be communicated to the public to ensure continued participation necessary to maintain the system?

(1) How does one assess whether the objectives have been achieved? Some governments have reported notable successes in implementing EPR. German authorities report that packaging was reduced by one million tonnes between 1991 and 1993. In addition, multi-use packaging for drinks increased in market share from 72 per cent to 74.5 per cent, and a clear trend is reported toward reusable transport packaging. More than 400,000 tons of packaging wastes were collected and recycled in Austria in 1993. A September 1988 paper on policies to promote waste minimisation, prepared for the Waste Management Policy Group, states that "Unless a clear and uniform statement of waste generation rate reportable to authorities is agreed and implemented, no precise way can be devised by policy-makers (and enforcers) to determine success." [6] The statement remains valid.

In the case of waste prevention and minimisation goals, there will be a few obvious measures of environmental effectiveness: amount of waste collected separately for recycling, amount of waste successfully recycled, amount of waste sent to final disposal. Waste prevention is rather more difficult to measure, since reductions in one type of waste may result in increases in another. More sophisticated measures are required. Identifying practical methods to ensure undistorted data is a challenge, and may require considerable ingenuity to adjust figures to take into account economic fluctuations and other factors having no direct relationship to the strategy being evaluated. The GDP, particularly, has been strongly linked to municipal waste generation rates; breaking this linkage would be a strong indication of policy

[6] See ENV/WMP/88.9, "Encouraging Waste Reduction/Minimization and Recycling: A Policy Oriented Overview."

success. Perhaps the most meaningful measure of waste minimisation is waste per unit of product output. This measure not only allows determination of progress in waste minimisation without being obscured by manufacturing growth, but also provides the baseline against which individual enterprises can make rational decisions regarding their response to waste prevention and minimisation policy signals from the authorities. ***Whatever measures are selected, well-calculated baseline figures are necessary if the measures are to be meaningful.***

Obtaining the agreement of stakeholders during the policy development process on the measures to be used to evaluate success (including the definitions to be used for recycling and waste minimisation) will facilitate the collection of data. It will also allow continuous monitoring on the part of producers to determine whether mid-course corrections will be needed to achieve the targets. Collection of comparable data from all sources will allow comparison of effects on a regional basis to determine whether achievement of national goals has been mirrored at a regional level.

(2) What are the environmental and socio-economic consequences of meeting the objectives? Environmental benefits are difficult to quantify. ***Overall environmental benefits are best understood in the context of the full life cycle of the products, but not all EPR strategies are using life cycle approaches.*** Consideration of environmental consequences other than those related to achievement of stated goals can be complex. Shifts among raw materials, manufacturing process changes, loss of materials during recycling, process emissions, and the management of residuals from the recycling process have environmental implications that must be weighed along with the benefits of avoided land disposal. In some cases they may alter the balance of environmental benefits associated with an EPR strategy. The following example suggests the complexity of the question of assessing environmental benefits:

What residuals are generated from the recycling processes, and how does the process contribute to waste minimisation? Using as an example electric arc furnaces, for which the input material is scrap metals, the complexities of interpreting success in waste reduction are revealed. Roughly 970 kgs of steel can be produced using 1,000 kgs of scrap metal used as feed material. In addition, around 3.38 Kgs of zinc and about .62 Kgs of lead can be reclaimed from the 15 kgs of furnace dust generated in the manufacturing process. How is this situation best characterized? 1,000 kgs of scrap metal has been diverted from final disposal, with a yield of 974 kg of new products. However, 43.2 kgs of "new" waste remain to be disposed (11.2 kgs hazardous, and 32 kgs non-hazardous). Is it better from a waste minimisation perspective to have 1,000 kgs of non-hazardous waste or 11.2 kgs of hazardous waste? Does the waste generated from recycling the scrap metal include only the 15 kgs of furnace dust (generally considered hazardous waste) or does it also include the waste from the recycling process applied to the dust -- recycling the dust is not an essential part of steel manufacture? Has 15 kgs of hazardous waste been recycled, or is the measure of what is recycled the 3.38 kgs of zinc and the .62 kgs of lead that were reclaimed from it? Few would argue that this situation is an overall benefit for the environment, but many would find different ways to communicate the waste minimisation achievement. One of the most significant environmental benefits is the reduction in energy use to produce the steel, which would not be directly relevant if assessing benefits is limited to waste minimisation measures.

Other questions that may produce important information concerning environmental benefits of a particular strategy include: ***How do the environmental impacts of the recycling process compare with the environmental impacts of landfilling or incinerating the end-of-life product? How will successfully removing major portions of the municipal waste stream impact the management of the remaining portion? What is the environmental balance for shifts in raw materials uses or product availability?***

Some ***economic consequences*** can easily be identified. ***One instructive measure of economic impact is the cost of managing a tonne of waste under the EPR strategy compared to the cost of managing a tonne of waste if the status quo had been maintained.*** Though few would argue that a greater cost can be justified in order to obtain waste reduction and recycling, only an informed public can usefully debate how much higher the cost can be and still be justifiable. ***Transparent, publicly-available***

accounting information showing these costs in language understandable to the general public is a necessary basis for such a debate. Such systems are not feature of EPR strategies to date.

Other socio-economic consequences are more complex to identify and evaluate, holding constant factors other than an EPR strategy. Such consequences could include, for example, shifting employment patterns, changes in prices of consumer goods, and lost opportunities for alternative investments on the part of specific industry sectors. ***Development of a model that would allow predictions of such consequences under a variety of scenarios would substantially improve the decision-maker's chance of avoiding undesirable outcomes.***

At the enterprise level, producers will reassess previous decisions regarding how to maximize profit, taking into account the costs of the new responsibilities they have assumed. Alternatives for action include measures which range from changes in product design to reduce post-consumer waste for which they will be responsible, through raising product prices and/or shifting the mix of products to finding alternative cost-saving measures within the variable costs category. ***If simply raising product prices or shifts in product mix can be utilized to absorb the additional costs, the incentive to reduce wastes may be lost.*** If one or more enterprises is able to absorb the new costs without raising product prices they may be able to gain market share if other enterprises raise prices. This type of shift would favour larger enterprises.

Since the producer has not previously been responsible for post-consumer waste, it is unlikely that waste reduction measures aimed at this stage of the life cycle have been evaluated for action within the profit context. Reductions in packaging or other materials that do not affect the integrity or marketability of the product will be taken. If production process changes would be required to make reductions at the post-consumer stage, they will evaluated against increased costs associated with the post-consumer waste. Whether the capital costs or other factors which discouraged a decision on waste reduction in the production stage in the past are counterbalanced under the new circumstances will depend upon enterprise-specific conditions.

Diversification of interests by larger enterprises leading to new potential profit centers and concentrations of economic power, or even practices which are countermanded by competition policies and laws may also be prompted in response to EPR strategies. This is especially true when major new investments in recycling plants or technologies are necessitated by responsibilities newly transferred to producers which result in dramatic increases of secondary materials to be recycled. In such cases some enterprises will benefit economically from a <u>failure</u> to reduce wastes. The inherent conflict between making profits on a per volume or weight basis for recycling end-of-life products and participating in decision-making in industry associations that negotiate contracts for these services was a concern identified and corrected early in the implementation EPR strategies, and illustrates one potential response which must be guarded against. When significant investments are made in new recycling capacity, the investment is recouped over time from producers, who must often pay the costs of recycling rather than be paid for materials. Governments have an active responsibility to monitor for such anomalies and to provide objective information to the public concerning these important aspects of policy implementation.

Determining whether significant changes in costs associated with implementing the strategy can be expected in future years absent government intervention will require consideration of transition costs. Such costs include establishing industry organisations to handle logistics of recycling, investments in equipment where collection and active management become responsibilities of producers, and capital investments (whether joint or at an individual firm level) for recycling processes that may cause sharply higher costs to producers in early years of the programme.

Some of the causes of ***potential shifts in employment*** associated with EPR strategies include shifts in materials used as inputs, increases in separate collection efforts, increased efficiency in municipal waste services, and investments made in new recycling plants. Other shifts may occur in response to the application of increasingly stringent environmental standards for recycling operations (such as the dismantler

example given in an earlier discussion) which are applied simultaneously with EPR strategies. ***Shifts in employment need to be considered as a whole to determine whether action is needed, since new employment may also be created by EPR strategies.*** Industry exemption organisations, research and development efforts, growth in recycling capacity, and increased separate collection all offer opportunities for job creation.

Whether and how much consumer prices for particular items rise will depend upon enterprise level decisions discussed above. Consumer reaction to price increases may require development of a public education effort either on the part of the authorities or industry associations. Words used to indicate a policy that producers may not charge a fee for collection of post-consumer wastes should be carefully reviewed to ensure that they do not imply that EPR strategies will be without cost to consumers.

(3) Does an analysis of costs and benefits suggest a need for modification of the strategy? The relative importance assigned various elements of such an evaluation is highly subjective and culture based. Even the elements to be evaluated are likely to vary from country to country or region to region. The development of a model accepted by authorities in OECD countries to identify and quantify benefits, and which could be used by national authorities to make informed decisions, would be very beneficial.

(4) How will progress be communicated to the public to ensure continued participation necessary to maintain the system? Post-implementation communications will focus on the same stakeholder groups identified in the early stages of policy development. Industry exemption schemes are likely to consider providing information to the public a critical element in its ability to achieve established targets, and therefore to undertake their own public education programmes. Nonetheless, the government's view of progress and its plans for changes to the programme will also be important messages for the public.

Maintaining open communications with local authorities, perhaps forming advisory boards or consultation groups from across the country, will also provide an important, informed, and objective source of information regarding performance achieved under the strategy. Such bodies could also be included in periodic meetings with the producers in order to establish routine feedback channels, generate new ideas for programme improvement, and consider joint actions, including priority-setting.

Continuous monitoring of the current situation will also involve routine discussions with international counterparts and trading partners to identify and address issues that, absent policy intervention, could threaten the current trend toward increased participation in waste management solutions by producers.

X. CONCLUSIONS

Once the questions of Table 1 are answered, the decision-maker should understand the current domestic and international situation, have a vision of the outcome that s/he wants, have discussed and agreed with stakeholders how to measure progress toward goals, and evaluated the controls necessary to ensure that domestic and international competition and competitivity concerns are considered to the of his/her ability. Still, having completed the analyses and consultative process suggested, the decision-maker confronts a difficult task for which there are no well-developed guidelines.

EPR strategies are in their infancy. The environmental benefits are difficult to quantify, taking into account the life cycle of target products. The economic costs are more quantifiable, and are likely to be high for producers. Nonetheless, they will serve to internalise waste management costs in product prices. The potential social consequences, particularly with regard to employment, are more difficult to predict absent a systematic model for doing so. The general public is anxious to protect the environment, but has little real understanding of the mechanisms at work in EPR strategies or the costs they entail. Under such circumstances the best course of action is not always clear.

The following recommendations are offered to those designing EPR strategies:

1. Consider phasing in the strategy, beginning with measures to promote markets and stimulate recycling capacity development, followed by recycling targets and dates.

2. Require that industry exemption schemes provide full accounting for financial transactions that are available on demand and easily understood by the general public.

3. Establish oversight bodies composed of local authorities and representatives of major stakeholder groups to monitor the performance of industry exemption schemes and make recommendations for policy or programme changes.

As useful adjuncts to EPR strategy design, the following measures are recommended:

4. Require local authorities to establish unit-based pricing for municipal waste management services based on full cost accounting and publish results.

5. Ensure that government purchasing policies promote the cost-effective use of products containing secondary materials.

6. Use all available leverage to ensure that purchasing policies of subordinate government units, enterprises providing services to government, and other enterprises to implement similar purchasing policies.

7. Eliminate tax incentives and financial supports that favour use of virgin materials in products for which secondary materials provide an effective substitute.

8. If economic instruments are employed to stimulate waste prevention and/or recycling, earmark revenues received for programmes related to these goals, and consider passing such revenues to local authorities for doing so.

International cooperation and information-sharing are important for improving implementation of environmental policies. ***Since EPR strategies are in an early stage of development and there are many questions that remain unanswered, it could benefit OECD governments to work together, and with other international organisations as appropriate, to:***

1. Develop shared methods to compare the costs and benefits of alternative approaches to waste prevention and recycling;

2. Develop case studies of trade effects attributed to implementation of national waste prevention and recycling strategies;

3. Consider joint strategies for handling significant increases in secondary materials supplies and resulting market disturbances;

4. Continue to refine and apply life cycle approaches to environmental policy development; and

5. Develop models capable of predicting the social consequences, including employment shifts, of environmental policy.

APPENDIX ONE

EXTENDED PRODUCER RESPONSIBILITY LEGISLATION IN THE OECD AREA

COUNTRY	Legislation Governing Extended Producer Responsibility Programmes
Australia	There is no federal legislation governing producer responsibility, as legislation concerning such issues in Australia has historically been handled individually by the State and Territory governments. While the majority of State and Territory governments rely only on a number of nationally agreed voluntary industry waste reduction agreements negotiated with the packaging and newsprint industry, a small number of States have developed complementary legislation to require industries to accept responsibility for the wastes that they produce: In the State of Victoria, the Environment Protection (Resource Recovery)Act introduced in 1992 gave the Victorian Environment Protection Agency (VicEPA) the power to enter into industry waste reduction agreements (IWRAs) with a single company, group of companies or an industry association. The content of an IWRA is set out in the Act and requires the industry to state what it will do by way of reducing, re-using, recycling and recovering its waste, and to set targets by which to measure the success of its efforts. Industry may submit its own draft agreement for the VicEPA to approve, or the VicEPA may require an industry to prepare an agreement. Organisations that do not comply with the Act can be named in Parliament. The New South Wales government has just enacted new waste management legislation which includes the provision for the Environment Minister to nominate industries which require the development of industry waste reduction plans. Industries can self-nominate or be nominated by government. The Minister also has the power to impose waste reduction targets on a nominated industry. Sanctions are provided in the event of industry non-compliance with the Act, including fines, product bans, and take-back requirements. In South Australia, the Beverage Container Act 1975 established a container deposit system for certain beverage containers, e.g. soft drink and beer bottles and cans. The legislation requires that a mandatory deposit be paid on the nominated containers which is redeemable on their return to retailers or collection depots.
Austria	Waste Management Act, 1990 (325 Federal Act of June 6, on the Prevention and Treatment of Wastes): **Section 7** provides authorities for the Environment Ministry to restrict or prescribe conditions for introduction and circulation of products in the market place. Paragraph 2 of Section 7 specifically provides authority for the government to require manufacturers and distributors to take back wastes that remain when putting the product to its intended use, taking into account requirements of product distribution and technical and economic possibilities. **Section 8** allows the authority to set targets for waste prevention goals in specified time periods without specifying more detail if there is reason to assume voluntary measures by industry within a reasonable time can achieve the goals. **Section 10** provides authority to require that recycled materials be used during product manufacture if it is necessary to do so to meet goals set out in the national waste management plan (after consultation with other relevant parties, e.g., Ministry of Finance, affected industry). **Section 12** specifies the responsibility of individuals to return household hazardous wastes via systems developed under the authorities identified above. **Section 39** provides authority to impose fines, the amount of which vary depending for failure to comply with requirements developed under these authorities.

COUNTRY	Legislation Governing Extended Producer Responsibility Programmes
Belgium	Environment Tax Act of 1994 Specifies environmental taxes to be paid upon introduction of seven categories of products into the market (carbonated drinks, disposable products, batteries, products containing harmful substances, pesticides and plant-based pharmaceutical products, paper and cardboard). If specific conditions are met by the industry as a whole, individual enterprises can be exempt from paying taxes on all categories except packaging made from PVC. Conditions for exemptions differ among the categories, but include, as examples, meeting quotas on market shares for reusable packaging, meeting rising quotas for recycling (which includes energy recovery), charging minimum deposits and recycling or disposing of products taken back by methods specified in regional regulations; and meeting specified minimum content requirements. Significant changes to this act are anticipated, and implementation has been delayed several times for technical reasons. Work is currently being completed on a draft interregional decree that would implement the EU Directive on Packaging; responsibility for implementation would remain at the regional level, but implementation would be done on a consistent basis throughout Belgium in order to reduce complexity for businesses. (Draft is likely to subject all packaging to the same standards: an 80% valorization goal is likely, with 50% material recycling required, leaving 30% of the goal achievable through energy recovery.)
Canada	No federal legislation governing producer responsibility at this time, however consideration is currently being given to providing such authorities through the Canadian Environmental Protection Act (CEPA). Provincial legislation frequently requires submission of waste management plans by local authorities; such plans often include waste prevention and minimisation plans, which may set reduction targets by waste stream, municipality, or at the facility level.
Denmark	The Consolidated Environmental Protection Act, No. 590 of June 27, 1994. In addition to other objectives, it seeks to reduce the use and waste of raw materials and resources, promote the use of cleaner technology, and promote recycling and reduce problems in connection with waste disposal. It applies to all activities which may, by generation of waste, cause pollution, as well as products or goods likely to cause pollution in connection with manufacture, storage, use, transport, or disposal. It states a clear preference for pollution prevention, encourages the design and composition of products to promote durability, the use of recycling to the greatest possible extent, and environmentally safe disposal. **Part II, Section 9**, provides authority for rules on deposit and rebate schemes for products specified by the Minister of the Environment. The Minister may also negotiate agreements with dealers and/or manufacturers to establish their own systems, and if a significant share of the market is covered by the agreement, may require that all other dealers or manufacturers join the scheme. There is a specific take back requirement authority in **Section 9a**, which also allows the Ministry to determine how products taken back are recycled or managed. Take back schemes must be negotiated between authorities and the most relevant national trade and environment organisations, organisations of local authorities, and other state authorities involved, including the Minister of Labour before the rules can be set down. The act further provides authorities to limit or ban the use of harmful substances in all or some subset of all products by regulation, as well as to require the use of recycled materials in manufacture of some or all specified products. **Part VII** specifies authorities to promote recycling and cleaner technologies, and to provide financial support for research and development in promoting recycling, waste collection, and reduction of adverse environmental impact by use of cleaner technology.

COUNTRY	Legislation Governing Extended Producer Responsibility Programmes
Finland	Waste Act of December 3, 1993, (Entered into force on 1 January 1994, repealing the Waste Management Act of 1978). **Chapter 3, Section 18, Paragraph 5** authorizes the Council of State to issue regulations including regulations regarding "the duty of the manufacturer, importer, dealer, seller or user of a product to partly or entirely take care for organizing waste management, or to answer for the costs arising from it, and the duty of the waste producer to deliver the waste to the waste management scheme so organized." Other provisions of the same Section allow authorities to collect information necessary to supervise implementation of such regulations. **Chapter 2, Section 4** also specifies the responsibility of producers, manufacturers, and authorities to take several measures to ensure careful use of raw materials, substitute raw materials with waste where possible, manufacture durable products and products that do not cause harm to the environment when managed as waste, and to use recyclable products or products manufactured from recyclable materials in government activities. **Chapter 3** specifically allows energy recovery, but establishes a preference for materials recovery. It also indicates that waste "shall be recovered if this is technically feasible and does not entail excessive additional costs compared with some other form of waste management."
France	Law Number 75-633 of 15 July 1975, as modified, with relevant provisions found in **Title III, Articles 5 and 6**. Article 5 requires that producers be able to demonstrate that the wastes produced by the products they manufacture can be adequately managed as prescribed in environmental laws and regulations, and to provide such information to the authorities if they are requested to do so. Article 6 specifies that the manufacture or introduction of a product into the market can be regulated with a view to facilitating management of the wastes arising from it; it also authorizes imposition of a requirement that the producers oversee or contribute to the management of wastes coming from their products. Finally, it indicates that producers may be required to "contribute," to management of wastes of products similar to the one it markets, but which were on the market prior to the entry into force of the law. Holders of wastes that are subject to such requirements must make the waste available to the persons required to manage it. Authority is also provided in **Title V, Article 17** to impose the use of a minimum proportion of recovered materials in products, but this provision has not been used to date. Law 92-646 of 13 July 1992 substantially revised national waste management policies to eliminate, by 2002, landfill of all wastes except those for which no further treatment is available, and imposed a landfill tax on a per tonne basis which accelerates each year through 1998. In 1995 the tax is 25F/t; 1996: 30F/t; 1997: 35F/t; and 1998 40F/t.
Germany	Waste Avoidance and Waste Management Act of 27 August 1986 **Article 14** provides authority for the Federal government to require, by ordinance, that products be part of a deposit refund scheme or that they be taken back by the producer after consumer use is completed. This it the legislative basis for the now famous "Green Dot" system. This act will be repealed when the new law, described below, enters into force. The Closed Substance Cycle and Waste Management Act of 27 September 1994, to enter into force in October, 1996, incorporates the polluter-pays principle and clearly defines responsibilities of producers with regard to low waste technologies for use in production and manufacture of low waste products; requires that voluntary industry solutions be taken into consideration in achievement of statutory goals, but provides for government intervention by ordinance should voluntary efforts fail; establishes conditions for energy recovery to be considered if certain quality standards are achieved, which is under these conditions in general equal to material recovery; priority for one sort of recovery (energy or material) can be imposed by ordinance. **Part 3, (Articles 22-26)** deals with product responsibility, identifying duties of manufacturers not only with regard to recovery and recycling of wastes from their products, but also with regard to use of secondary raw materials in production processes. Enforceable obligations will be defined through the development and implementation of ordinances for particular products. Authorities are provided to restrict or prohibit circulation of particular products, and to establish labelling requirements for a variety of purposes (e.g., identify noxious substances in the waste, indicate the requirement of the producer to take back the product, or specify that the product is part of a deposit/refund scheme). New ordinances that are developed to oblige the producer to accept returned goods must be submitted for the approval of the Bundesrat and the Bundestag.
Greece	No information at this time.
Iceland	No information at this time.

COUNTRY	Legislation Governing Extended Producer Responsibility Programmes
Ireland	The Waste Bill, 1995 was recently published by the Department of Environment and is currently being discussed prior to passage. It provides for measures to prevent and reduce waste production, encourage and assist recycling and recovery of waste, and reduce the risk to, and impact on, the environment from waste by strict control of waste collection, movement and disposal. New powers under the Waste Bill will enable wide-ranging controls to be imposed in relation to problematic raw materials, products and wastes. Other regulatory measures in the Waste Bill will facilitate the reduction of waste (especially packaging) from the services and retail sectors. These measures could include mandatory waste audits and waste reduction programmes. The government has indicated that the primary responsibility for devising, operating and financing systems of return and collection of packaging waste will lie with producers, importers, distributors and retailers who have a commercial involvement with packaging. It is intended as far as possible to apply this concept of producer responsibility on a voluntary basis, supported where necessary by statutory requirements. The Waste Bill provides for possible exemptions from requirements for those participating in recognised voluntary schemes. The Bill will facilitate the application of the principle of producer responsibility in relation to other waste steams where appropriate.
Italy	475/88 Law **[Italian Del: We need the correct title of the law.]** -- Compels manufacturers of certain products to form a national consortium to collect and recycle their products; Manufacturers and importers of plastic packaging must achieve 40% recycling before specified deadline (extended because of technical problems beyond manufacturers' control) or face a levy of 100 Lire per container, depending on the volume of materials introduced on the market; compulsory consortia also for glass bottles and aluminum cans. A 1993 Ecotax law placed a tax on unregenerated plastic film, to be applied before the final product stages, so it is not specific to packaging; intent is to reduce plastics use. This law replaced the former tax on plastic shopping bags not made of biodegradable plastics. The law specifies that revenues from this source should be used to assist in materials recovery and recycling. Currently under development is a national legislative proposal to implement the EC Packaging Directive; this is a joint effort by industry and local authorities.
Japan	Wastes Disposal and Cleansing Act of 1970, as amended in 1991: Especially Article 3 (Duties of Enterprisers), Article 6-3 (Cooperation of Enterprisers), in which paragraph 2 explicitly states that mayors of municipalities are "entitled to demand the cooperation" of enterprisers in order to facilitate proper treatment and disposal; and paragraph 3, under which the Ministry of Health and Welfare may demand measures of the Ministry of International Trade and Industry to enable municipalities to secure cooperation from industry on particular wastes said to be difficult to handle for purpose of treating and disposing of those wastes. Law for Promotion of Utilization of Recyclable Resources, 1991 -- Makes explicit the responsibility of corporations to use recyclable resources in the manufacturing process, and to take recycling into consideration in the product design stage. Includes a list of products that should be made "easy to recycle" that includes automobiles and more than a dozen types of household electronic goods. Calls for marking of products that can be sorted for recycling, including beverage cans and nickel-cadmium batteries. Also sets targets for reuse of some industrial wastes. Basic Environment Law, November, 1993: Article 4 makes sustainable development an explicit objective. Article 8 (Responsibility of Corporations) reinforces provisions of the Waste Disposal and Cleansing Act, making explicit that "corporations are responsible for taking necessary measures for ensuring proper disposal of the wastes generated from products and other goods related to their activities. Act on Promotion of Sorting, Separate Collection and Valorization of Containers and Packaging, 1995 -- Requires enterprises to valorize all containers and packaging appropriately collected by municipal governments. Applies to enterprises (including importers) which use specified containers, use specified packaging, or manufacture specified containers. Enterprises under a specified size are exempt from coverage. Application to certain paper or plastic containers and packaging is deferred for five years until 2000. Enterprises can collect and valorize covered materials themselves, collect the materials themselves and have them valorized by approved corporations, valorize materials collected by municipal governments themselves, or have materials collected by municipal governments valorized by approved corporations.

COUNTRY	Legislation Governing Extended Producer Responsibility Programmes
Luxembourg	No information at this time.
Mexico	No information at this time.
Netherlands	Chapter 10 of the Environmental Management Act of 1993 allows the government to compel producers and importers to take back their products in the waste stage and to process them in a specific way. For the financing of a take-back and recycling system Chapter 15 of this Act allows the government to make an agreement on a waste disposal fee, made on a voluntary basis by a significant portion of producers and importers, binding for everybody who produces or imports such a product. Tax on Landfilling and Incineration of Waste: Allows the government to levy a tax on landfilling and incineration of waste; at this moment there is only a tax (f 29,20) on landfilling of waste.
New Zealand	No legislation covering extended producer responsibility.
Norway	The Pollution Control Act and The Product Control Act provide the legal basis for producer responsibility. **The Pollution Control Act** was revised in June, 1993. Article 33 (on recycling and other treatment of waste) indicates: "In order to solve waste and pollution problems the pollution control authority may stipulate that waste shall be recycled or treated in some other way. The pollution control authority may among others make decisions regarding: (a) reuse, (b) material recycling, (c) energy recovery, (d) destruction, (e) collection, storage, sorting, and (f) binding targets for reuse, recycling, etc. When deciding whether to make such a stipulation, emphasis shall be placed on whether the total environmental benefits are in reasonable proportion to the costs, and the costs of other ways of treating the waste. Stipulations in accordance with the first paragraph may be placed on the producer, importer, resale or the user of a waste generating product, and the one that collects or possess the waste. If voluntary agreement is not achieved between the parties it may be stipulated pursuant to the first paragraph towards the one that can use or treat the waste for others if (a) this is necessary to ensure proper treatment of waste which may cause serious pollution or injury to health, (b) such a decision is necessary in order to achieve satisfactory implementation of an organized system for collection and treatment of waste. A person who delivers waste to someone who, pursuant to the fourth paragraph, is under obligation to receive it shall indemnify the recipient and shall deliver the waste on terms which ensure the recipient reasonable remuneration for his/her work. If the waste has a value exceeding this amount the recipient shall be settled by arbitration pursuant to the Civil Procedures Act of 13 August 1915." Other important amendments to the act included a requirement that municipalities set waste fees at a level that includes all costs related to waste management, including collection, transport, aftercare, etc. **The Product Control Act**, Articles 4b and 5 are used to regulate specific waste streams, such as used tyres and bottles that are part of deposit-refund systems.
Portugal	No information at this time.
Spain	No information at this time.

COUNTRY	Legislation Governing Extended Producer Responsibility Programmes
Sweden	The Waste Collection and Disposal Act of 1979 (1979:596) as amended by the "Ecocycle Bill" that entered into force on 1 January 1994, imposes "producer liability". **Section 6a** defines producers as commercial manufacturers, importers, or sellers of products; it also includes anyone who in the course of commercial activity produces waste requiring special measures from the viewpoint of waste collection and disposal or environmental conservation. **Section 6b** provides the government authority to require that producers ensure wastes from their products are reused, recycled, or disposed of in environmentally acceptable ways through issuance of regulations. **Section 17a** provides authority for the national or local authorities to develop regulations allowing imposition of a charge for removal and final disposal of waste by the producers.**Section 24** provides for penalties and possible imprisonment for persons deliberately or negligently failing to fulfil such responsibilities, and **Section 24a** extends fines for providing misinformation concerning any regulation in effect. **Sections 4 and 5** impose responsibility on local authorities for managing domestic waste, except when that waste is subject to regulations regarding producer liability, in which case the responsibility is specifically removed from the local authority. The Act on the Recycling of Aluminum Beverage Containers (1982) requires a deposit system for all aluminum beverage containers introduced on the market. Returpack AB is the only permitted company which operates a deposit-refund scheme. The deposit is 0.6 Swedish kronor. More than 90% of the aluminum cans are collected and recycled. The Act on Certain Beverage Containers (1991) Specifies that any PET beverage containers that are not covered by a deposit/refund scheme must be covered by a materials recovery scheme and must be licensed by the government in order to be placed on the market. (This provision became effective in 1993; prior to that time only PET beverage containers that were part of re-use systems were allowed.) Returpak-PET AB is the only licensed firm for taking charge of reuse and recycling systems. The deposit varies from 1 to 4 Swedish kronor. The permit requires 90% of bottles must be recycled or reused.

COUNTRY	Legislation Governing Extended Producer Responsibility Programmes
Switzerland	June, 1993 Proposed revisions to the Federal Law on the Protection of the Environment of 7 October 1983 were introduced, and remain under consideration by Parliament (during late 1995). The Chapter (number 4) dealing with waste proposes the following changes: (Article 30) As a principle, wastes should be avoided, and if this is not possible, wastes must be valorized as far as possible. (Article 30a) If, through the manufacturing of products, wastes are produced for which no environmentally sound disposal exists, the cantons are allowed to force changes in production processes to eliminate the waste problem. Additionally, the Federal government has the right to ban products for one way or short lived products if the advantages of those uses do not justify the environmental burden they impose, and to ban the use of substances or organisms that significantly complicate the management of waste, or could create a danger to the environment when disposed of. (Article 30b, para 2) Would specifically provide that those who put a product in commerce, which, once it has become a waste, is suitable for valorization or needs special treatment, may be obligated to take back the product after use and/or to participate in a deposit-refund scheme. (Article 30b, para 3) Indicates that if a deposit-refund scheme is established, producers may be required to contribute possible profits of this scheme for the promotion of the return rate for materials for which deposits are charged. (Article 30d) Would provide authority for the Federal Council to require that certain wastes be recycled if doing so is economically supportable and would pose less impact to the environment than if disposed of in another way. Additionally, the Federal Council can restrain the possible uses of certain products if doing so would allow the increase of use of products that are made from recyclables without causing significant additional costs and without loss of important product qualities. (Article 32a) Producers and importers (including sellers) of products which after use are widely dispersed (e.g., batteries, cans, old tyres, refrigerators, electronic equipment) and require special treatment, or for which recycling is considered appropriate, may be obliged to pay an advance disposal fee to the Swiss Federation. Switzerland would attempt to have a private fund operated by the private sector for implementing this. The funds collected would be used for management of the concerned waste. The Federal Council will set a minimum and maximum level for the fee, and the Federal Interior Department will fix the exact amount based on the cost of disposal, within the given boundary levels. The Federal Council may also prescribe that those who put a product in commerce inform the consumers about the fee paid.
Turkey	The Turkish Environment Law (Law Number 2872) passed 9 August 1983 indicates in Articles 8 and 11 that "It is prohibited, to introduce into, store in, transport to or remove from the receptor area any discharge or waste in such a way as to inflict damage on the environment or in a way directly or indirectly in contradiction with standards and methods specified in the pertinent regulations, or to engage in similar activities," and "Business concerns, which are responsible for purification, removal or treatment of discharge and waste of all kinds, shall also take precautions to ensure that no damage is inflicted on the environment through these measures. These provisions support the regulations on deposit-refunds.
UK	The Environment Bill, likely to receive Royal Assent in July 1995, contains three producer responsibility clauses, numbers 77 - 79, to allow regulations to be set for any waste stream, to promote or secure, or to sustain at least a minimum level, in the re-use, recovery and recycling of products or materials. The obligations would be framed in terms of target levels and individual firms could meet the obligations alone or could collaborate in schemes. The legislation is intended to provide the lightest possible touch and to allow industry the maximum flexibility. It will be administered by the Environment Agency.

COUNTRY	Legislation Governing Extended Producer Responsibility Programmes
US	No relevant Federal legislation; various States have legislation targeting one or more problematic waste streams, e.g.: Florida had legislation imposing advance disposal fees for beverage containers, with exemptions possible if specified percentages of recycling were achieved per material. The advanced disposal fees were suspended in 1995 because the law met its desired goals. Minnesota, New Jersey, and many other states have legislation requiring producers to take back some kinds of batteries (e.g. nickel-cadmium and/or lead acid batteries). A number of States have minimum recycled content standards for various materials/products, including newspapers, glass containers, and plastic containers.
EU	No specific legislation or policy on extended producer responsibility. Single Europe Act, Article 130r, incorporates polluter-pays principle and Directive 75/442/EEC of 25 July 1975 establishes four general obligations of EU members; one is to apply the polluter-pays principle. (Note: many countries indicate that for domestic policy purposes the polluter-pays principle is the basis of extended producer responsibility programmes.)

APPENDIX TWO

EXTENDED PRODUCER RESPONSIBILITY IMPLEMENTATION OVERVIEW

COUNTRY	Ordinances/Regulations/Voluntary Agreements
Australia	Voluntary agreements have been entered into by various sectors of the packaging industry on a national basis, for reductions in the waste generated by those sectors. In 1992, the Australian and New Zealand Environment and Conservation Council (ANZECC), consisting of representatives from each of the Federal, State and Territory environmental agencies, negotiated a series of waste reduction targets with manufacturers of plastic, glass, steel, aluminum, liquid paperboard, paper and cardboard packaging, as well as with newsprint manufacturers. The agreements generally took the form of undertaking by industry to meet targets for recycling of certain percentages of their packaging product wastes by the end of 1995. With the expiry of most of these targets, ANZECC has agreed to develop new industry waste reduction agreements encompassing a broader range of industries than just the packaging industry, such as the construction and demolition industry, and focusing on waste minimisation across the product life cycle rather than just recycling. ANZECC has established a task force which will undertake negotiations with industry during 1996. The first of the new agreements, with 5 major construction companies, has now been endorsed by ANZECC and requires these companies to implement waste reduction plans for each of their construction projects. Some States also have their own industry waste reduction agreements in place to supplement the national arrangements: The Environment Protection Agency in the State of Victoria has negotiated State industry waste reduction agreements with the packaging industry, covering such materials as glass, paper, aluminium cans, high density polyethylene and steel cans, with the newsprint and publishing industry, and the road construction industry. The Tasmanian Department of Environment and Land Management has entered into voluntary agreements with a number of the industry groups involved in the national industry waste reduction agreements to ensure the maintenance of recycling infrastructure on the island State of Tasmania. The New South Wales Government has signalled its intention to negotiate State industry waste reduction agreements under its new Waste Minimisation and Management Act.

COUNTRY	Ordinances/Regulations/Voluntary Agreements
Austria	**Ordinance** on packaging entered into force in October, 1993 (an amendment entered into force in June, 1995) requiring industry to take back packaging free of charge; transport, secondary, and sales packaging must meet rising quotas for collection, peaking at 80% in 1999. Regardless of the collection target, the collected packaging must be reused or recycled to a target level set on a material specific basis (e.g., paper/cardboard: 90%; glass: 93%; plastics: 40%). **Ordinance** on beverage packaging (effective October, 1993) sets targets for refillable packaging; failure to meet goals would result in sales restrictions, e.g., in a requirement for a deposit/refund scheme. 1991 **Ordinance** on batteries (nickel-cadmium, zinc-carbon, alkali-manganese, lithium, mercury oxide, silver oxide) and accumulators requiring take back and limitations on cadmium and mercury contents. 1991 **Ordinance** requiring manufacturers of florescent lights to take back end of life lamps. 1993 **Ordinance** establishing right of purchasers of new refrigerators to return an old one at no charge (financing through disposal stickers purchased at time of purchase of new refrigerator), and to return an old refrigerator without a purchase for a fee. According to the amendment (effective March, 1995), a voucher for the disposal (worth at least AS 100) has to be bought on purchasing a new appliance; on disposing an old device with a voucher the consumer has to pay for the disposal costs, minus the value of the voucher. 1993 **Draft Ordinance** on Electr(on)ic appliances and equipment. **Voluntary Agreement** since 1992 on take back of end of life vehicles. **Other Draft ordinances** on expired drugs (partial) and waste paper. **Section 24 of the Austrian Waste Management Act** directly sets out sales requirements for oil pan screens.
Belgium	**Voluntary agreements** on take back of packaging are currently operating in each Region. and FOST-PLUS, a voluntary industry coalition is currently operating in each Region, in a fashion similar to Eco-Emballages (in France) or the Duales System Deutschland (in Germany); it is handling only packaging from households at this time. Other initiatives may develop during implementation of the Environment Tax Act.

COUNTRY	Ordinances/Regulations/Voluntary Agreements
Canada	**Voluntary efforts** on packaging are underway nationwide; an interim goal of a 20% reduction in packaging waste disposal was achieved in 1992 en route to a final reduction target of 50%. **Product stewardship efforts** have concentrated on providing separate handling for toxics in the household waste stream, e.g., used oil. The industry led multi-stakeholder Hazardous Waste Minimisation Committee and its sub-committee the Household Hazardous Waste Task Force (HHWTF) is coordinating the design and implementation of voluntary product stewardship programmes for Canada, with assistance from the Canadian Council of Ministers of the Environment. Province of British Columbia has developed **post-consumer paint stewardship programme regulations**, which are now being implemented. Some provinces have **deposit/refund** schemes for soft drink containers. **Enterprise-level voluntary take backs**: Among other private initiatives, Black and Decker initiated a take back programme in late 92, and provided a $ 5 customer rebate as an incentive to participants through February, 1994. The programme continues, but the rebate has been discontinued; the programme has become self-supporting, and the company now accepts any Black and Decker product through any of its 280 service centers operating throughout Canada. Laidlaw Waste Systems is providing, on a pilot basis, services related to office equipment disassembly and material recycling for clients including Xerox Canada, IBM, Canon, Kodak and Pitney Bowes. The programme aims to prevent substandard products from returning to market, sound disposition of hazardous parts and material, return of reusable parts to the manufacturer, and recycling of up to 95% of the raw materials utilized.
Denmark	**Voluntary agreement** initiated in 1991 for industry to take back rechargeable batteries. The goal is 75% collection of the potential batteries used each year. After three years, the percentage actually taken back has reached about 35%. From 1 January 1996, collectors can get 22 US$ per kg. of spent Ni-Cad batteries delivered to recycling. An ecotax finances the fee. The voluntary agreement is now being negotiated. **Voluntary take back** of used starter batteries, beginning on 1 January 1996, is supported by a voluntary agreement with the Danish Minister of Environment and Energy and two statutory orders. One makes actors in the sector who do not wish to join the agreement responsible for achieving the same goals, the other provides for a fee to cover the cost of the collection scheme established under the agreement. **Voluntary agreement** to limited use of refillable and returnable soft drink plastic (PET) bottles in the bottle deposit scheme has been operating since 1991; it is achieving its goal of maintaining an efficient system of returnables according to the Danish government. **Voluntary agreement** signed on take back and recycling of transport packaging; 80% recycling goal; separate collection and disposal costs are borne by the waste producer; additional analyses are being done to determine the goals for plastics, metals, textiles and wooden packaging. Signed on August 16, 1994. The additional analyses will be concluded in the fall of 1995 and final goals will be adjusted accordingly. **Voluntary agreement** to limit the use of solvents in specified household appliances was concluded in mid 1993; the agreement also asks manufacturers and dealers to restrict marketing of a number of kinds of solvents. **Voluntary agreement** on take back of used tyres to limit disposal of tyres by landfilling. The goal is collection and recycling of a minimum of 80% of discarded tyres. The agreement is supported by a statutory order levying fees on tyres and financing collection of tyres.

COUNTRY	Ordinances/Regulations/Voluntary Agreements
Finland	**Voluntary** recovery of waste paper organized by the producers based partly on business economy, and partly on waste legislation (a Council of State decision is under consideration). **Product charge** (paid by the producer) on new lubrication oil that pays for proper collection and management of waste oil (which has achieved a recovery rate of 70-80%). **Deposit system** for soft drink, beer and alcohol producers,commercial organisations, and bottle manufacturers. The deposit system is supported with a **tax** on non-refillable, non-returnable containers. The tax is from 1 to 4 F/M depending on the material and whether the recycling of the container material is organized. The Council of the State decision on the recovery and treatment of used tires was issued on October 12, 1995. The purpose of the decision is to increase the recovery used tires up to 90% by 2000. The producer (importer, manufacturer) is responsible for organising the collection, transport, recovery and other waste management of used tires. The retailer is obliged to take back used tires from the consumer free of charge. Consumer is obliged to deliver used tires to the retailer or other collection place established by the producer if the consumer does not organise the recovery him/herself. The producer is responsible for reporting yearly to the authority on the material flows of new and used tires. The decision will enter into force on June 1, 1996. New producer responsibility initiatives are currently being discussed on cars, electric and electr(on)ic equipment, and lead acid batteries. Producer responsibility regulations are presently under development concerning tires, waste paper, and packaging.
France	**Ordinance 92-377 of 1 April 1992**, entered into effect 1 January 1993; regarding recovery of household packaging materials, waste avoidance and recycling, and conditions for industry schemes for carrying out new responsibilities; product manufacturers and importers are responsible, or if these are unable to be determined, the person marketing a packaged product; three alternatives are provided -- (1) deposits on packaging, (2) individual firm schemes for collection and recycling, and (3) contributions toward establishment of collection/recovery systems by the local authorities; no quotas for recovery are specified in the ordinance. **Ordinance 94-609 of 13 July 1994**, regarding packaging from all non-household sources), entry into force Fall 1994 for paper and board, late July, 1995 for all other transport packaging materials; final user separating the product from the packaging is the responsible party; alternatives provided are -- (1) individuals setting up own system, concluding contracts with recovery plants, or (2) contracts with an intermediary firm that assumes responsibility for transport and trading of packaging materials; no recovery quotas are specified in the ordinance; there is a prohibition on mixing transport packaging materials with other packaging materials if mixing them makes recovery of the components more difficult. It is allowable to collect together transport packaging of paperboard, paper and similar materials because they follow the same recovery process. **Voluntary agreement** since March, 1993 on end of life vehicles to have cars be 85% recoverable material by 2002, and ultimately made of 95% recoverable materials. French car manufacturers have set up collection and recovery systems and entered into a multi-national agreement with German auto makers to create a Europe-wide system for cooperating firms. Anticipate a voluntary agreement on electr(on)ic products before the end of 1995, based on a report developed with the cooperation of the industry at the request of the government. **Enterprise level voluntary take back** efforts include IBM (take back) and Hewlett Packard, now operating a processing facility processing 120 tonnes/month of end of life computers for materials recovery.

COUNTRY	Ordinances/Regulations/Voluntary Agreements
Germany	**Ordinance on Avoidance of Packaging Waste, 12 June 1991** is now in the process of being revised. In original form, included compulsory deposit systems for packaging for beverages, detergents, cleaning agents, and latex paints. Set collection and sorting goals, the product of which provide the resulting recycling goals for the packaging to be taken back. Industry choices to achieve government defined goals for collection and recovery include: (1) firm level take back; or (2) participation in industry-wide organisation for collection and recovery. **Voluntary Agreement** on take back of computers. **Voluntary Agreement** on take back of mercury and nickel-cadmium batteries. Primary achievement has been significant reduction in heavy metals content of batteries. Because the implementation of this agreement has not led to any specific take back scheme, the government is considering creation of an ordinance to support a deposit/refund scheme. **Draft ordinance** on electr(on)ic products is expected to be completed during 1995. Draft covered 13 different categories of products, including white goods, anticipating responsibility of individual manufacturers for their own products in a phased implementation plan. Serious differences of opinion between government draft and industry proposal, which supports separate collection by municipalities which would directly contract with recyclers. Industry role would be product redesign for recyclability. **Draft ordinance** on end of life vehicles under discussion within the government; fees would be collected at purchase, with gradual reductions of allowable portions of end of life vehicles that could be landfilled. Discussion centers around competition issues and the desirability of having dismantlers and recyclers come under the supervision of manufacturers. Quite different than **industry proposal** which also provides a gradual reduction of shredder waste, framework conditions for licensing dismantlers, certificates of disposal required, and payment by citizens at the end of the automobile life for its recycling. Industry is also participating in voluntary efforts on take back, both national and international.
Greece	No information at this time.
Iceland	**Fee system** for end of life vehicles.

COUNTRY	Ordinances/Regulations/Voluntary Agreements
Ireland	**Waste Bill, 1995**, when enacted, will facilitate the application of the principle of producer responsibility to the better management (involving minimisation, collection, recovery, disposal) of waste in all waste streams. These include batteries, construction/demolition waste, electric/electronic waste, end-of-life vehicles, and rubber tyres. **IBEC Industry Task Force on Recycling**: Following publication of the strategy document "Recycling for Ireland" in July, 1994, the Irish Business and Employers' Confederation set up an Industry Task Force on Recycling to develop a strategy for recovery and recycling of packaging waste, including paper packaging waste. The Task Force was set up in response to an invitation from Government and is examining various issues involved in the implementation of the national recycling strategy and EU Directive 94/62/EC on packaging and packaging waste. IBEC have indicated that they will submit an interim report of the Task Force in the near future. **Study on Used Newsprint**: A study has been jointly commissioned by the Department of the Environment and National Newspapers of Ireland (NNI) in relation to the increased use of old newspapers (ONP) for animal bedding and related uses. A report is expected by the end of 1995. **Society of the Irish Motor Industry Initiative on Batteries**: Article 6 of EU Directive 91/157/EEC on batteries and accumulators requires that Member States draw up four-year programmes for the achievement of specified objectives, including, inter alia, the separate collection of spent batteries and accumulators with a view to their recovery and disposal including, where appropriate, the setting up of refundable deposit schemes. The Department of Environment has initiated discussions with industry with a view to finalising a program at an early date. SIMI (Society of the Irish Motor Industry) are co-ordinating the response from the motor industry and the response is expected shortly.
Italy	Following the consortium model introduced in the 1988 law for some products, a **voluntary consortium** has been developed by manufacturers of ferrous containers to collect and recycle their products . **Consortia** for plastic, glass and metal liquid containers and batteries collect and recycle them under 1988 law; some implementation issues have arisen from a lack of funding. **Product charge** of 4000L/tonne for lubricating oil is used to finance collection and disposal; 70% currently recovered by consortium. **Enterprise level voluntary efforts** include a Fiat experimental disassembly plant, and an IBM data processing equipment dismantling center. The IBM center is supported by a voluntary firm-level take back commitment.
Japan	**Voluntary guidelines** on the use of waste paper and cullet and on the labelling of steel and aluminum cans. **Ordinance** concerning the manufacture of air conditioners, televisions, refrigerators, and washing machines. **Voluntary agreement** with home appliance industry to treat end of life products properly. **Ordinance** on automobile manufacture and repair. **Ordinance** on use of recyclables in construction use of slag and coal ash in the iron and steel industry. **Regulations** under development on televisions, refrigerators, tires, spring mattresses; may add motorcycles, vehicle batteries, and paper diapers to the regulations. **Manufacturer specific** (BMW) voluntary take back of end of life vehicles.
Luxembourg	No information at this time.

COUNTRY	Ordinances/Regulations/Voluntary Agreements
Mexico	Study underway possibly leading to comprehensive approach on packaging.
Netherlands	**Voluntary agreement* (covenant)** on packaging waste, June, 1991: concrete targets for the packaging industry on quantitative and qualitative prevention, product re-use and material re-use. **Voluntary agreement (covenant)** on plastics waste in industry, 4 March, 1993: plastics industry undertakes that by 1 February 1995 a plan is drawn up for the prevention of plastics waste at source and dumping of waste is ceased by the year 2000. **Voluntary agreement (covenant)** on agricultural plastics waste, 4 March, 1993: Agricultural Board and Plastics industry undertake the collecting and the recycling of at least 70% of the agricultural plastics by the year 2000. **Order of 19 December 1994** on declaring universally binding the agreement for the recycling of cars for a period of three years. Based on this agreement, everybody who produces or imports a car has to pay f 250 for the recycling of end-of-life vehicles. **Ordinance on batteries, 10 March 1995**: Producers and importers have to make a plan before 10 May 1995 on the taking-back and recycling of their batteries. This plan contains measures for realizing a collection percentage of 80% in 1996 and 90% in 1998. **Ordinance on tyres, 26 April 1996**: Producers and importers have to make a plan before 1 December 1995 on the taking-back and recycling of their tyres. **Draft Ordinance** on agricultural plastics waste: Producers and importers have to make a plan on the taking-back and recycling of their agricultural plastics waste. **Draft Ordinance** on electr(on)ic products: Producers and importers have to make a plan on the taking-back and recycling of their products in the waste stage. **Draft Regulation** on packaging to implement the EU Guideline. * In the Netherlands, voluntary approaches of this type are also known as "negotiated agreements".
New Zealand	**Voluntary agreements** are the preferred method of waste reduction under the Government's waste management policy. **Voluntary agreement** on management of used oil includes targets for collection. **Voluntary agreement** on packaging is under negotiation.

COUNTRY	Ordinances/Regulations/Voluntary Agreements
Norway	**Regulation** related to return systems for beverage packaging and a tax levied on refillable and non-refillable beverage packaging, stimulates the use of packaging which is accepted in a return system. The tax is differentiated according to the rage of reuse or recycling. Packaging with no return system or with a return rate below 25% are levied full tax rate. For packaging with return rates between 25 and 95%, the reduction of the tax rate are equal to the return rate, i.e. is a 50% return rate implies a 50% reduction of the tax rate. In addition, a basic tax is levied on non-refillable beverage containers. More than 95% of the refillable beer and soft drink bottles are returned, and 65% of the non-refillable packaging of glass bottles of glass (liquor bottles etc.) are collected and recycled. **Four voluntary agreements** between Ministry of Environment and representatives for the plastic, metal, cardboard paper and fibreboard packaging sectors, respectively, were signed in October 1995. The agreements cover the packaging which is not subject to taxes on beverage packaging. The following targets are to be met before 1999: - Plastic: At least 30% material recycling and 50% material recycling. - EPS-plastic: At least 60% recovery, including at least 50% material recycling. - Metal: At least 60% material recycling. - Cardboard: At least 60% recycling, including at 50% material recycling. - Corrugated and non-corrugated fibreboard: At least 80% material recycling, including at least 65% material recycling. A similar agreement on packaging of glass will probably be signed early 1996. **Voluntary agreement** between the Ministry and Norse Skog to build a deinking plant for for waste paper by 1998 and to guarantee for export up to 120 000 tonnes a year until that time. Recovery rate in 1995 is approximately 55-60%. **Voluntary agreement** between Ministry and producers ensuring that 60% of beverage cartons will be collected and recycled by 1997. 90% of the population is expected to have access to a collection system. **Voluntary agreement** between the Ministry and AS Batteriretur ensures collection, recycling and sound treatment of used batteries. Target for recovery is 95%, but in 1994 a large backlog in storage netted a 120% recovery rate. **Regulation** banning landfill of used tyres came into force 1. January 1995. An agreement was negotiated between the producers and importers, who will establish a collection and recovery system, and the Ministry. **Deposit** system established in 1978 for end-of-life vehicles now achieves 85% return rate.
Portugal	**Voluntary agreement** for take back of glass and cartons.
Spain	Considering voluntary agreement for take back of liquids packaging; to include targets and implementation requirements.

COUNTRY	Ordinances/Regulations/Voluntary Agreements
Sweden	**Ordinance** for Packaging (SFS 1994:1235) since 1 October, 1994 supplements pre-existing deposit/refund scheme for beverage containers and establishes targets for reuse and recycling of glass bottles, other glass containers, aluminum and plastic containers other than beverage containers made of aluminum and PET, corrugated paper, card, paper and cardboard, and steel. Local authorities are specifically relieved of responsibility for managing these materials. **Deposit/Refund** requirements for aluminum and PET beverage containers continue in force. **Ordinance** for Waste Paper (SFS 1994:1205) since 1 October, 1994 sets target of 75% collection, recycling, or other environmentally acceptable disposal by 2000; covers newspaper, magazines, direct mail ads, telephone directories, catalogs, etc. **Ordinance** for Tyres (SFS 1994:1236) since 1 October, 1994 allows no more than 40% landfilling (of total number of waste tyres) by the end of 1996, graduated to no more than 20% by the end of 1998. Failure to meet goals may result in imposition of a deposit/refund scheme. **Voluntary agreement** for take back of nickel-cadmium batteries supported by a fee collected by the government at the point of sale and passed to the industry processing the batteries has failed to reach its interim goal of 60% take back by July, 1995. Next actions are being contemplated by authorities. Consideration is also being given to new ordinances on paper other than packaging, newspapers and magazines, tires. Authorities are reviewing an industry proposal for privatization of the end of life vehicle scrapping system operated by the government since 1975. Negotiations have begun for a voluntary agreement on electr(on)ic wastes. (There is currently a proposed ordinance on electronics.)
Switzerland	Ordinance on Beverage Containers, Goals/Targets: Prohibition of PVC-bottles. Multiple use containers must be charged with a mandatory deposit. The maximum amount of aluminum cans, tinplate cans, glass bottles and PET bottles which may be disposed of with the municipal waste is fixed in tons. This means that a certain recycling rate must be achieved. If targets are missed, a mandatory deposit will be introduced for the concerned material. Voluntary advance disposal fee for batteries introduced by the involved parties (producers, importers, sellers). Voluntary advance disposal fee for aluminum cans, tinplate cans and PET bottles, introduced by the involved industrial sectors. Voluntary advance disposal fee for cars; introduced by the association of car importers. This fee is collected for the planned improved disposal of the non-metallic shredder fraction of the used car (fluff). Voluntary takeback of data-processing equipment (e.g., computers) and office equipment (e.g., fax machines) introduced by the concerned parties. A voluntary advance disposal fee is often already included in the product price. Voluntary introduction of disposal fee for refrigerators, introduced by a special organisation of the involved parties. Fee is usually charged when the refrigerators are disposed of.

COUNTRY	Ordinances/Regulations/Voluntary Agreements
Turkey	Turkish Solid Waste Regulation, March 14, 1991, as amended on April 3, 1991. Establishes a quota and **deposit** system on plastic, metal, and glass cups and packaging for liquids and for some cleaning products in order to prevent the destruction of ecological systems and in order to control the usage and disposal ratio of the mentioned cups. An amendment in February, 1992 allowed authority to establish a system for collection of the empty cups and packages by the producer of these cups and packages on behalf of the firms which fill them. The firms which are responsible for the collection of empty cups are allowed to come together to establish a foundation for collecting the empty cups. An amendment of November, 1994 extended the legislation to cardboard boxes and thermoplastic materials, which are now subject to application of the quotas.
UK	The first waste stream to which the pending legislation will be applied is packaging. A consultation paper covering 6 options, all proposed by industry, for defining the legal obligation was published in May, 1995 and a further consultation on more detailed regulations, including target setting, is due later in 1995. Regulations will be in place by the middle of 1996. Discussions on the most appropriate way to deliver producer responsibility for tyres, electrical and electronic equipment, car batteries, domestic batteries, newspapers and end of life vehicles are continuing.
US	Florida imposed **advance disposal fees** for beverage containers, with exemptions possible if specified percentages of recycling are achieved per material. The advanced disposal fee was suspended in 1995 because the law met its desired goals. Minnesota, New Jersey, and many other States have legislation requiring producers to take back some kinds of batteries (e.g. nickel-cadmium and/or lead acid batteries). Thirteen States have standards for minimum content of recycled materials in newspapers; fifteen more have voluntary agreements with newspaper publishers to increase purchases of recycled content products. Several States have minimum recycled content standards for certain kinds of beverage containers (e.g., plastic and glass bottles). **Deposit/refund schemes** for beverage packaging operate in some states, toward the end of increased recycling.
EU	**Packaging: Directive 94/62/EC** specifies targets to be achieved; flexibility is provided for Members' methods of implementation; initiation of extended producer responsibility is not mandated. Priority waste stream working groups are considering various other waste streams, including electr(on)ic scrap, end of life vehicles.

APPENDIX THREE. PACKAGING PROGRAMMES IN THE OECD AREA

COUNTRY	Since	Type	Scope	Goals/Targets
Australia	1992	Voluntary industry waste reduction agreements. The agreements were negotiated between the various sectors of the packaging industry and the Australian and New Zealand Environment and Conservation Council (ANZECC) (consisting of representatives from each of the State, Territory and Federal environmental agencies). With the majority of the agreements due to expire in 1995, ANZECC has agreed to develop new industry waste reduction agreements, which will extend beyond packaging manufacturers to a wider range of industries.	The industries agreed to targets to recycle certain percentages of the waste generated in the various material-specific streams. Most of the targets were to be achieved by the end of 1995. The recycling activities could include reuse of the waste in the same form or to produce different products. The industries were also encouraged to pursue waste reduction objectives more broadly, e.g. lightweighting, as a contribution to the recycling targets.	The various ANZECC/industry targets for waste reduction by materials-specific packaging sector are as follows: Glass containers 45% Aluminum cans 65% Steel cans (by 1996) 25% Liquid paperboard 20% Newsprint 40% Paper packaging 71% of input fibre to be secondary Plastic containers: Overall 25% HDPE 50% PET 30% Vinyl 15% Polystyrene 10% Polypropylene 15%

COUNTRY	Since	Type	Scope	Goals/Targets
Austria	Amended June, 1995	Packaging Ordinance (Initial ordinance finalized in October, 1992). Amendment sets specific criteria for energy recovery which, in general, municipal incinerators do not meet. Standardized formats for reporting were also added. A second ordinance, also 10/92, sets targets, expressed as reuse targets for beverage packaging, and as final user return requirement for other packaging. (It supersedes the previous refillable beverage container decree.) Both ordinances now under review. Changes are anticipated, including the possibility of allowing energy recovery for plastics in municipal incinerators.	Final user must recover used packaging (to a level set on a material specific basis) or return it to the collection/recovery system designated for the material; if none exists, has right to return the material to person responsible for handling Industry must take back and re-use or recycle (to a level set on a material specific basis) used packaging "free of charge"; may use existing systems for collection and recycling at local authority level Altstoff Recycling Austria (ARA) founded in February, 1993, administers programme for industry, collecting fees based on type of packaging material, with lowest fees for those materials easiest to recycle. A non-profit organisation, ARA can be joined by anyone affected by packaging ordinance except waste management industry. Governed by supervisory board with 6 representatives from the three equally represented sectors: bottlers and importers; the trade; packaging sector. All district authorities in Austria take part in ARA, but they are not members of ARA itself. Ara has powers to raise license fees and pay contributions, appoint sector recycling companies to collect and recover materials (by contract); supervise use or resources by sector companies; formulate terms and conditions of contracts granting use of license symbol; review collection/recovery guarantee. ARA fees in ascending order of price: reusable glass wood paper-transport glass non-reusable paper-sales ceramics large tinplate small tinplate aluminum large plastics	Transport and sales packaging must be collected at following rates **unless manufacturers and sellers participate in third party systems**: 10/93 until 05/95: 40% 06/95 until 06/96: 50% 07/96 until 06/98: 60% 07/98 until 06/99: 70% From 07/99: 80% The collected packagings must be re-used or subject to materials recovery to the extent specified depending upon the packaging material. The only packaging for which thermal utilization is allowed is untreated wood.

COUNTRY	Since	Type	Scope	Goals/Targets
Austria (cont'd)			Sector recycling companies (SRCs) collect and recover different types of packaging: AGR, Austria Glass Recycling; ARO, Waste Paper Recycling Organisation; and ArgeV, Verpackungsverwertungsgesellschaft for composites, aluminum, tinplate, wood, ceramics, and textiles. These firms arrange for local waste disposal companies to collect and sort or do it themselves; calculate license fees. Share responsibility with 5 other organisations dealing with specific sectors: AVM, composites, OKK, synthetics, ALUREC, aluminum, Ferropack, and VHP for wood. They are also non-profits, and are the "third parties" referred to in ordinances. Ecobox was set up in Nov. 1991 for beverage cartons by manufacturers themselves and is owned by them.	Beverage Packaging: for waters, beers and wines, liquid milk products, fruit juices, sparkling wines and liquors and alcohol free refreshments, targets are defined for refilling and recovery (not distinguished); in the years 1994, 1997, 2000. If these targets are not met, then sales restrictions, e.g., a requirement for a deposit/refund scheme would be promulgated. Other Packaging targets are set by weights for 1994, limiting amount of these types of residuals that can be landfilled or incinerated, and for 1998 and 2001 limiting amount of these types of residuals that may be landfilled. Glass, plastics, paper, including carton, cardboard and corrugated board, metals, and composites are included. Ecobox goal is collection of clean/sorted cartons and achievement of 80% recycling quota. Collection is in boxes provided consumers at recycling plants, post offices, etc., which must take back and handle boxes free.

COUNTRY	Since	Type	Scope	Goals/Targets
Belgium	1 April 1994	Voluntary agreements Environment Tax Act in place. Implementation was delayed from 1/1/94 to 4/1/94; to 1/1/95; and finally, to 7/1/95. At present, affected persons must only declare readiness to comply by that date. **[check status]**	Each of the three regions already has a voluntary packaging waste system in place. ETA applies to persons who introduce seven categories of products into the market: (Sec. II) Carbonated drinks (Sec. III) Disposable products (Sec. IV) Batteries (Sec. V) Products containing harmful substances (Sec. VI) Pesticides, plant-based pharmaceutical products (Sec. VII) Paper, cardboard <u>Beverage packaging</u>: for carbonated drinks, 15BF/l and minimum of 7BF/item. Conditional exemptions for both returnables and disposables; other types of beverage packaging expected to be phased in (milk, e.g., due 12/31/97) <u>Harmful Substance Containers</u>: e.g., printing ink, adhesive, oils, solvents, weedkillers. 25BF/l, to maximum of 500BF/item; does not cover containers not intended for professional use; if covered by deposit system and other conditions met, exemption available. Coverage expected to expand over time. <u>Paper/Paperboard</u>: apply to newsprint, corrugated board, boxboard, non-glossy magazine paper - 10BF/kg if on specified dates do not attain recoverable content goals. Specific exclusions: paper and board for books and magazines; paper in contact with food and medicine; technical and special papers (undefined). Reduction/exemption from tax requires demonstration meeting goods. For imported goods, the person resident in	Anticipated revenue is 2 billion BF/year; each manufacturer will pay 7- 300 BF/year, depending on product mix. Returnable containers for carbonated water, cola,soft drinks and beer: Reuse quotas are specified for each year starting in 1994 going through 1998; reusable containers are exempt from the tax if there is proof of 7 refills per container, the package is marked with the deposit required and notice it is reusable. The deposit minimum is 7BF for containers of >.51 liters, or 3.5BF for smaller ones. If those conditions aren't met, one can still get one year exemption at a time by meeting certain reuse or recycling quotas -- reuse specified for types of drinks, years 1994-1998; for other types of drinks, re-use quotas are calculated using a formula based on re-use figures for 1991; they must, in addition to meeting the re-use quotas, demonstrate continuous rise in recycling quota for disposables, specified for glass (80%), plastics (70%), and metals (80%) or be member of recognized recycling organisation that does meet those quota; a specified % of population must achieve the recycling goal.

COUNTRY	Since	Type	Scope	Goals/Targets
Belgium (cont'd)			Conditional exemptions from payment of tax are available for all categories except PVC packaging. A follow-up commission to examine the feasibility of implementation for this law has suggested several substantive changes now being taken under consideration by the government; these recommendations include dropping the inflexibility on PVC use, expanding the bill to include all drink packaging, rather than just carbonated drinks; reconsideration of the refillables quota, and exemption of refillables from the 15BF tax for other drink packages.	Costs of collecting/sorting and recycling are to be paid by those "liable" For harmful substances, exemption granted if minimum deposit (to be specified by the government) is charged, product is taken back and recycled or disposed in accordance with regional regulations and paid for by the manufacturer, and the packaging displays a symbol indicating a deposit has been paid for it.
		Interregional Decree providing legal framework for FOST PLUS in drafting stage.	Industry created "FOST-PLUS" in 1993 to handle packaging collection and recycling, now 53 shareholders @ 2 million BF/member (goal is 75 members at this price for initial capitalization); fillers, importers, manufacturers, retailers and trade associations are members. Expect to begin collection of license fees in 1995. Will have contracts with one collector per material type. Anticipate 1500 contracts or licenses to fund system, using Green dot system. Early 95 had 300 licensees, and is operating on voluntary basis pending interregional decree for EU packaging ordinance. Industry wants green dot packages to be exempt from eco-tax. Anticipated government role in the interregional decree would be to impose a statutory requirement that marketers contribute to management of waste and to control licensing conditions of FOST PLUS and supervise use of the green dot.	

COUNTRY	Since	Type	Scope	Goals/Targets
Canada	30 March, 1990	National Packaging Protocol endorsed by Canadian Council of Ministers of the Environment Targets to be achieved by voluntary actions. Later, targets to be set by industry sector: any industry sector that cannot meet targets has responsibility to provide supporting documentation and alternative targets one year before failing to meet targets.	Covers industrial, commercial, and household packaging. Developed in consultation with all stakeholders by the National Task Force on Packaging commissioned by the government in May, 1989. Principles were agreed based on extensive background reports prepared on cost, technical issues, and stakeholder positions. Six key policies are described and the actions of all parties to implement those policies are described in the Protocol. Implementation is monitored by Canadian Council of Ministers, assisted by a multi-stakeholder group, the National Packaging Monitoring System. The latter group will establish monitoring policies, and the CCME will decide issues relating to how to fund activities of the group -- currently through provincial and federal funding with assistance from Environment Canada. <u>Issues to Date</u> * Multi-stakeholder group turns out not to be best suited to identify research and development opportunities -- industry sectors are doing this job. * National minimum recycled content standards seem to be on hold. * Timing of existing municipal contracts for waste collection and handling doesn't necessarily allow adding ambitious new separate collection projects immediately. * Cost sharing for additional separate collections remains a point of discussion. * Market development is proving difficult.	Goal of 50% reduction in disposal by 12/31/00, using 1988 as base year; intermediate targets of 35% reduction by 12/31/96, and of 20% by 12/31/97. The 1992 goal was met; percentage goals are to be reviewed annually. 50% of the diversions from disposal are to be achieved through source reduction and new reuse initiatives. Legislative/regulatory framework is to be put in place to be implemented at provincial level if goals are not achieved; to be developed in consultation with a multistakeholder group. National minimum recycled content standards to be developed at Federal level with stakeholder consultation. Provincial/municipal governments are to establish infrastructure in conjunction with industry to ensure collection and market development mechanisms. Industry and federal government also to work together toward market development and improvement.

COUNTRY	Since	Type	Scope	Goals/Targets
Denmark	August, 1994	Voluntary Agreement Voluntary Agreement Regulatory	Transport packaging to achieve an overall goal of 80% recycling. To limit the use of PVC in packaging. All beer and water bottles must be refillable and have a return system; amounts to one way packaging ban for beverage containers covered.	Government goal is to recycle 50% of packaging waste by 2000; this will be achieved by the measures specified on the left, and is combined with a strategy focusing on incineration of municipal wastes with energy recovery.

COUNTRY	Since	Type	Scope	Goals/Targets
Finland		Voluntary agreement	The framework agreement on packaging was signed 14 March 1995 by the Ministry of Environment and the packaging industry. Proposal for the Council of State decision on packaging to introduce producer responsibility to avoid "free riders" and to enforce the requirements of the EU Directive is under consideration.	Targets of the voluntary agreement are: *General: to decrease the use of material and energy and load to environment caused by packaging by the end of 2001. *Reuse, recycling, or other recovery will be 70-85% of all packaging material by the end of 2001. *Recycling and other recovery of packaging waste will be 50-65% by the end of 2001. *Recycling and recovery targets for each material group will be set in 1995.
		Ecotax	Packaging for some liquids (limited to beer and soft drinks) are subject to an ecotax based on the size and use of package. The tax can be avoided if the container is part of deposit system, the deposit is at certain level, and consumers can easily return it to any retailer. To meet the exemption, the distributors must meet 75/85/90/95% return rates in years 1/2/3/4 of the deposit system operation. (Refillables are 92% of beer sales market and 94% for soft drinks; one way packaged imports are quite substantially more expensive in the market.) New legislation calls for beverage packaging manufacturers/distributors to establish deposit systems or pay an environmental surcharge on product sales.	

COUNTRY	Since	Type	Scope	Goals/Targets
France	Entry into force: January, 1993	Ordinance No. 92-377 of 1 April 1992	Covers packaging from household sources. Eco-Emballage, an industry-wide body for administering obligations of persons introducing packaging into the market, implements the system using existing collection systems established by local authorities. Responsible parties are manufacturers and importers; if neither is identifiable, the first marketer of a packaged product becomes responsible. Three choices are given to responsible parties: charge a deposit on their packaging; individual enterprise level takeback programmes, or contribution toward the establishment of a system by local authorities for packaging collection and sorting. (Incineration with energy recovery will be allowed as a type of recovery.) Ordinance specifies no targets/quotas. Eco-Emballages collects fees for licenses by volume for rigid hollow-bodied items, and by weight for packaging components, repackaging (sales packaging) and non-dimensionally stable sales packaging. Its license to operate will be renewed by the government only if goals and objectives of the ordinance are met. A consultative body meets two times a year. It is a 33 member Commission representing local authorities, the entire business chain and interested Federal ministries. This bodies oversees implementation of the Eco-Emballages Charter.	Goals: save landfill space and recover materials. The target is written into the license awarded to EcoEmballages by the government: 75% recovery (incineration, recycling, composting), with at least 30% recycling by 2003. Eco-Emballages provides funds to local government bodies to conduct collection and sorting, using the existing mix of bring systems and household collection. The contribution is set per ton collected and sorted. Certain local authorities may receive funds for public relations activities if they have a contract as a "pilot scheme" with Eco-Emballages. Materials manufacturers give a guarantee to take back and recover the waste in their contracts with Eco-Emballages and district authorities. Multiple types of contracts between Eco-Emballages and local authorities can be drawn up: one for those with existing collection systems; one for those ready to pilot collection systems; and one for those looking to market single materials already collected. Long term contracts may be entered into at the end of one of the three shorter term varieties. The purpose of the long term contract is

COUNTRY	Since	Type	Scope	Goals/Targets
France (cont'd)	Entry into force: 9/94 for paper and board; 7/95 for other materials.	Ordinance No. 94-609 of 13 July 1994	Commercial and service: The final user separating the packaging from the product is responsible for performing the required actions. The choices presented are: set up an enterprise level recovery system; contract with a recovery plant; or, contract with an intermediary dealing with transport and trading in the secondary material. No targets or quotas for recovery are specified in the ordinance. Transport packaging may not be mixed with other packaging.	to achieve the 75% recovery rate. Eco-Bois was set up in January 1993 to handle wood packaging, but it has not yet been licensed by the government. Re-use of wooden pallets is its goal. Adelphe was set up in January, 1993 by manufacturers and bottlers of the French wine and spirits industry. They organize collection of all types of glass packaging, and have a non-contractual cooperative agreement with Eco-Emballages. Funding is handled in a similar through license agreements with material manufacturers. Their target is having one drop off bottle bank per 600 residents. They will make one payment of 3,000 FF for purchase of bottle banks given to each district authority. Cycla-Med was established in September, 1993 and licensed for 3 years to run collection of expired medications and medicines packaging.

COUNTRY	Since	Type	Scope	Goals/Targets
Germany	12 June 1991	Ordinance on the Avoidance of Packaging Waste	Established a graduated implementation period: December, 1991: transport packaging must be taken back; April, 1992: secondary packaging must be taken back; January, 1993: sales packaging must be taken back. By January, 1993 all Lander had granted an exemption from enterprise level take back requirements for companies participating in the Duales System Deutschland. The ordinance imposes a compulsory deposit system on packaging for beverages, detergents, cleaning agents, and latex paints in addition to recovery and recycling requirements. Goals for collection and sorting (the product of the collection goal and the sorting goal yields the recycling goal) were set for January, 1993 and for July, 1995 for: (January 93 recycling goals) Glass 42% Tinplate 26% Aluminum 18% Cardboard, carton 18% Paper 18% Plastic 9% Composites 6% Revisions to the ordinance that are now planned may extend the deadline and/or change the recycling targets for 1996 and 1998 for the following materials (from - to) : Glass 70 - 70 Tinplate 70 - 70 Aluminum 70 - 70 Cardboard, carton 50 - 60 Paper 50 - 60	Goals: (a) reduction through avoidance, reuse, recycling; (b) put responsibility for disposal on manufacturers and marketers; (c) relieve local communities from disposal tasks; (d) promote materials recycling. Roles: Government defines goals, trade and industry find ways to achieve it Called "Duales" system because it runs side by side with the municipal waste management system. By mid-1995 64% must be recycled for paper, cardboard, plastics, and composites, and 72% for glass, tin plate, and aluminum. Reusable bulk beverage containers cannot drop below 72% market share, nor for pasteurized milk below a 17% share, or compulsory deposits will be imposed on the containers. The goal is to retain reusables market. Indicators of success cited by the Ministry of the Environment: 1 million ton reduction in packaging from 1991 to 1993; a clear trend toward reusable packaging for transport; multi-use packaging for drinks increased from 72% to 74.5%; in 1993, 60% of sales packaging was collected, and 54% recycled.

COUNTRY	Since	Type	Scope	Goals/Targets
Germany (cont'd)				Potential concerns: greatly increased recycling capacity for plastics. Many exports to TUV certified plastic converting companies in Far East (400,000 tonnes of plastic collected in 1993, only 124,000 were recycled). These exports should be ended by 1998.
Greece				
Iceland				
Ireland	New legislation authorizing EPR anticipated in 1995		The plastics industry association has launched IR-RECOUP, to plan an industry based EPR programme.	A National Strategy developed in 1994 sets goals of 33% for recovery of packaging, based on 55% for glass, 25% for other materials, to be achieved by end of 1999.
Italy	1988	Industry consortia	1988 Law 475 called for formation of 3 non profit consortia to achieve recovery goals for liquids packaging: glass/plastic, metals, composites. Up to 50% of the recycling goal can be achieved through energy recovery; if goals are not met, then surcharge will be placed on packaging on a volume basis.	Targets are 50% each for glass and metal; 40% for others.

COUNTRY	Since	Type	Scope	Goals/Targets
Japan		Voluntary Guidelines	Ordinance on use of waste paper, and cullet in product manufacture; ordinance on labelling steel and aluminum cans as recyclable.	
	1995	Legislation -- Implementation to be developed	Includes all containers and packings attached to commodities such as bottles, tins, paper or plastic containers. Certain paper or plastic containers and packings are exempted from application for five years (until 2000). Applies to enterprises (including importers) using specific types of containers for the commodities they sell; manufacturing specific containers; using specific packaging for the commodities they sell; small enterprises, under an established scale, are exempt. Enterprises must valorize containers and packaging separately collected by municipal governments. Enterprises may collect containers or packaging by themselves, may trust valorization to the approved corporation, or valorize containers and packaging collected by municipal governments, or trusting recycling enterprises (approved corporation) to valorize containers and packages collected by municipal governments.	All containers and packaging collected appropriately by municipal governments must be valorized by enterprises.
Luxembourg				
Mexico	Studying possible compre-hensive approaches to packaging			

COUNTRY	Since	Type	Scope	Goals/Targets
Netherlands	June, 1991	Voluntary Agreement (Covenant, enforceable)	Foundation for Packaging and the Environment represents all the branch organisations responsible for bringing packaging to the market. Annexes to the Covenant contain specific measures the industry will take to achieve targets; these include trial projects for separate collection of used packaging and stopping the practice of offering bags free in grocery stores with purchases. LCAs were done to compare one ways vs. refillables. In some cases there is some environmental advantage for refillables. Research on the economic aspects is being done. Committee (2 members appointed by Environment Minister, 2 by industry, with an independent chairman) reviews progress reports submitted by the Foundation. Formal reviews of progress scheduled during 1994 (now in progress) and 1997.	By 2000: reduce packaging waste to the 1986 level of 2 million tons, and make every effort to reduce it to 90% of the 1986 level. Take back 90% of packaging that can't be reused; recycle 60% of what is taken back, materials reuse is preferred to energy recovery, but energy recovery allowed in some cases. Stop landfilling packaging waste. Phase out use of PVC.
New Zealand		Voluntary agreement under negotiation	At the request of the Minister for the Environment, the Packaging Industry Advisory Council is negotiating a voluntary agreement on packaging materials. A Packaging Environment Advisory Group, including representatives of industry, central and local government, consumers and environmental groups has been established to review the existing information on packaging materials and develop proposals for management. Information on manufacture, import, export, recycling, and disposal, as well as packaging material reductions will be considered in developing the agreement. All the major packaging media will be covered.	Currently under negotiation.

COUNTRY	Since	Type	Scope	Goals/Targets
Norway		Regulation	Beverage packaging	Achieves >95% return of beer and soda bottles, 65-70% of liquor bottles
		Voluntary agreement	Imposes fees on glass packaging; reduction in the fee may be given depending upon the level of recycling. To ensure recycling of glass not part of deposit/refund schemes, the Ministry has given economic support to a glass cleaning system.	Recovery rate is 65-70%
		Voluntary agreement	Build a plant for deinking for waste paper by 1998 and export up to 120,000 tones of waste paper until that time. The Ministry is responsible for increased collection of wastepaper by municipalities.	Recovery rate in 1995 is approximately 55-60%.
		Voluntary agreement	To ensure that all cardboard that is collected will be recycled.	
	May, 1994	Regulation	All operations producing more than 250 kg/year of cardboard waste paper must sort and store paper for reuse and/or materials recycling and ensure that reuse and/or recycling is achieved.	
		Voluntary agreement	Ensures that 50% of beverage cartons will be collected and recycled by 1996. Fifty municipalities now have a collection system, and the number is expected to reach 200 by the end of 1995.	
		Voluntary agreement	To ensure collection, recycling and sound treatment of used batteries.	Target for recovery is 95%, but in 1994 a large backlog in storage netted a 120% recovery rate.
	January,1995	Regulation	Bans landfill of used tyres. A complementary agreement was negotiated with producers and importers, who will establish a collection and recovery system.	

COUNTRY	Since	Type	Scope	Goals/Targets
Portugal				
Spain	Discussions initiated in 1993.	Considering voluntary agreement, with possible supporting regulations to establish targets and implementation requirements. Industry suggesting a programme similar to Eco-Emballages of France.	Beverage containers.	

COUNTRY	Since	Type	Scope	Goals/Targets
Sweden	Effective 1/10/94	Ordinance	Building on previous beverage container deposit/refund systems in place, defines targets for all packaging for 1997. Pre-existing requirements continue in place for aluminum and PET beverage containers. Collection and processing of these materials is handled by RETURPAK, and conditions are established under a different set of ordinances. The Ordinance specifically removes responsibility from the local authorities for handling materials collected under this ordinance. It also specifies that the householders have a responsibility to place these materials in the collection systems provided by the industry. Development of collection system and reporting requirements are enforceable under law. However, targets are not specifically referred to in enforcement provisions. A Packaging Council has been formed, with five subsidiaries for materials: plastics, metals, corrugated, cardboard, and glass. It has a not for profit status. Small producers will pay a flat fee, others will pay by the volume and material they introduce to the market. REPA is the registration company that will make contracts with the recovery firms.	Glass (bottles for wine and spirits, filled in Sweden) 90% reuse Glass (standardized bottles for beer and soft drinks) 95% reuse or recycle; Other glass containers - 70% reuse or recycle Aluminum other than beverage containers - 50% reuse or recycle Plastic other than PET beverage containers - 30 reuse or recycle Corrugated paper - 65% reuse or recycle Card, paper or cardboard - 30% reuse or recycle Steel - 50% reuse or recycle
Switzerland			Beverage containers.	
Turkey			Beverage containers.	

COUNTRY	Since	Type	Scope	Goals/Targets
UK		Industry proposal		In November, 1994 the Producer Responsibility Group (PRG) presented their plan to recover 58% of packaging waste by 2000. They also requested framework legislation to eliminate the risk of companies gaining a competitive advantage by refusing to take part. Three clauses were therefore included in the Environment Bill to set a legal producer responsibility obligation and targets, although this will be applicable to any waste stream not just packaging. A consultation paper covering six options, all proposed by industry, for defining the legal obligation was published in May 1995 and a further consultation on more detailed regulations, including target setting, is due later in 1995. Regulations will be fully in place by the middle of 1996. Although the legislation will set targets it will allow industry maximum flexibility to deliver them in the way in which they consider best.

COUNTRY	Since	Type	Scope	Goals/Targets
US		Varies by State	Most prevalent form is a deposit/refund for liquids packaging. (However, aim is largely focused on recycling rather than reuse as in European schemes.) CONEG (Council of Northeastern Governors) proposal for packaging offered to Northeastern/North Atlantic States would have goals set for each company to meet. The baseline would be the company's 1988 packaging usage. Targets would be 15% reduction by 1996 and 35% reduction by 2000, using any combination of source reduction, reuse, recycling, and recycled content. The proposal also includes model language for a "rates and dates" approach on an industry-wide basis in case some State legislatures prefer such an approach. An advance disposal fee of 1 cent per container was assessed in Florida for plastic, glass, aluminum, other specified recycling rates by a date certain. These advance disposal fees were suspended in 1995 because the law had achieved its desired goals. Several States have minimum recycled content standards for certain kinds of beverage containers (e.g., plastic and glass bottles).	

COUNTRY	Since	Type	Scope	Goals/Targets
EU	Published 31/12/94	Directive 94/62/EC Repeals Directive 85/339/EC on Containers of Liquids for Human Consumption	Legal basis, Article 100(a) of the Treaty of Rome; by 30 June 1996 the Directive must be incorporated into national law; all targets are measured from this date. The Directive became effective on the date of its publication. ***This directive does not impose EPR, but provides Members flexibility in implementation, with a special recognition for economic instruments*** European Commission is called on in the Directive to work on defining "essential requirements", toward standardization of LCA methods, composting standards, and various other technical tasks. Article 4 will allow Member states to exceed the targets established if they can demonstrate that they have the domestic capacity to handle the excess materials above the target levels, and if a Commission review shows that the internal market will not be disturbed.	5 Years from implementation, recovery of a total of 50-65% of packaging by weight. >=25% and <=45% by weight of all material should be recycled, with a minimum of >=15% recycling for each material type. 10 Years from implementation, more stringent targets are foreseen. They will be set by qualified majority of the Council no later than 4 years and 6 months after implementation begins, and targets will be reset every five years thereafter. HOWEVER,Greece, Ireland and Portugal can implement the directive by achieving >=25% recovery 5 years from implementation, or they may achieve the same targets as others, but delay the compliance dates no later than 31 December 2005. Member states will report progress beginning in 1998; the first report will cover the period 1995-1997.