

**BACKGROUND PAPER
FOR THE SECOND NATIONAL EPR WORKSHOP
MARCH 6-8, 2002
WINNIPEG, MANITOBA**

February 13, 2002

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1. INTRODUCTION

Purpose

This paper is intended to serve as background for the Second National Workshop on extended producer responsibility (EPR), to be held in Winnipeg on March 6-8, 2002. Environment Canada hosted the First National Workshop on EPR in May 1997 in anticipation of the OECD Workshop on EPR held in Ottawa December of that year. The concept and practice of EPR have both matured considerably since then, and Environment Canada and the Manitoba Ministry of Conservation are co-hosting the current event to provide a forum for industry, stewardship boards, governments, academics and others to discuss issues that pertain to EPR or product stewardship in Canada. The objectives of the workshop are threefold:

- Share information and perspectives on Canadian and international EPR Programs, policies and planned initiatives.
- Improve idea-sharing, cooperative approaches and communication on EPR programs to enhance product stewardship responsibilities for designated products or materials in Canada.
- Improve the performance and measurement of existing, planned, and future EPR programs.

This paper does not provide a comprehensive review of all issues related to EPR. Nor does it purport to present definitive “best practices” or solutions to each of the various issues it discusses. Rather, this paper identifies and discusses some of the priority issues related to improving the use of EPR as a cost-effective environmental and industrial policy in Canada.

Context

EPR initiatives are becoming increasingly common. At least thirty countries have EPR laws for packaging; about fifteen for battery take-back programs and nine now require the recycling of electronics components. A CCME inventory¹ identifies thirty-six Federal and provincial producer stewardship programs in Canada for such items as beverage containers, tires, used oil, packaging, batteries, paint, refrigerants, pesticide containers and other hazardous materials. As a result of the increased use of this approach, Canada – like other countries – has experienced a shift over the past few years from asking what EPR is and whether or not to implement it, to issues of implementation – the focus of this workshop.

While the precise impacts of each EPR program vary depending on scope, context and other factors, recent OECD reviews confirm that well-designed EPR programmes generally increase collection and recycling rates significantly. They do so by making resources available that governments, by themselves, through taxpayer funding, are typically unable to make (Tojo et al, 2001). In addition, some EPR

¹ The CCME is updating this inventory, which is available at: www.ec.gc.ca/epr/inventory/en/index.cfm.

programmes have stimulated design-for-environment (DfE) changes, although in many cases these DfE impacts result from supplementary programs, requirements and pressures.

2. ISSUES FOR THE SESSION ON TARGETING PRODUCTS AND MATERIALS FOR EPR PROGRAMS

The preliminary issue, of course, is to determine that there is a policy rationale for addressing the disposal of the product in question. Possible rationale may range from specific environmental or human health concerns associated with the current end-of-life stage of the product, to a desire to stimulate upstream DfE changes, to a general policy decision to shift the costs of waste disposal to the producer.

Once a policy rationale for addressing the product has been established, the basic question² to help determine whether an EPR program would be appropriate is: for this product, could an EPR program be designed to transfer physical or financial responsibility to the producer in a way that: a) enhances waste diversion and/or b) reduces energy and material use, waste generation or hazardous waste generation through DfE?

Relevant considerations to help answer these questions include:

- **Product characteristics: ease of differentiation.** In order for EPR programs to be effective, the target product needs to be one that consumers can easily differentiate and separate from the waste stream. With that characteristic, EPR programs appear to work well for a variety of products – durable (computers) and non-durable (packaging), simple (beverage containers) and complex (automobiles). However, most existing programs address products that are difficult to manage and are either high volume (packaging) or contain hazardous substances (electronic waste, paint, etc.). EPR programs have helped overcome the limited ability of municipal collection and recycling infrastructures to manage these products.
- **Consumer awareness.** Consumer cooperation, another pre-requisite for effectiveness, requires: a) high level of concern about the problems associated with the disposal of the product in question, together with, b) convenience, financial incentives and information on the scheme. Good program design can ensure some of these features, but it is also useful to ascertain the level of consumer willingness and ability to support the program in advance.
- **Structure of the market.** The greater the number of producers and distributors of a product, and the

² These questions are modified from a recent “workbook” developed for Environment Canada, *Assessing When to*

more dispersed the distribution network is, the more difficult it becomes to coordinate and control their actions. That said, however, complex markets should not deter EPR as there are examples of effective EPR programs addressing complex markets. Instead, market complexity may be an important consideration in determining the type of return mechanism. In general, for example, a centralized mechanism such as a blue box may be appropriate for complex, multi-source products such as packaging, whereas it may be more effective to rely on return-to-manufacturer arrangements for large, valuable items such as autos and electronic waste.

- **Existence or potential for a secondary market.** An important question for policy makers in terms of whether or not to develop a government-sponsored (voluntary, negotiated or mandatory) EPR program is whether an EPR program will contribute to a viable secondary market. This is a complex question. In some cases, it requires asking whether the program will help overcome existing market barriers. For example, in a recent presentation to the OECD, a Dutch official (Veerman, 2001) suggested that EPR is most useful where recycling of a product has a chain deficit (by making producers responsible for this deficit, EPR overcomes the deficit by financing the recycling). More generally, it is important to be aware that the increased supply of secondary materials resulting from an EPR requirement can have various impacts. Where supply goes beyond demand or processing capacity, the program can lead to a glut of materials, which in turn may impair the secondary market. In other cases, the increased supply can help reduce the price of secondary materials, leading to increased demand and a stronger market.
- **Supportive policy context.** EPR programs do not operate in a vacuum. Policies and programs such as landfill policies, local/regional economics, taxation policies, trade policies, granting systems, environmental approval issues (e.g., waste-to-energy, etc.) can all affect the performance of EPR programs (and vice versa). It is therefore useful to identify existing policies and programs that might support an EPR program, existing barriers and any additional or new programs that would help ensure attainment of the overall policy objective behind the desired program.

Another issue that should be considered in determining whether and how to ensure that an EPR program will be effective is the **scope of the program**: which products will it address? This issue is directly related to the question of the scope of the “producer responsibility organization” (PRO) established to carry out the producers’ collective stewardship responsibilities. Canadian and foreign experience includes successful programs ranging from single product-specific arrangements to omnibus programs designed to oversee the take-back of a wide range of products.

Perhaps more important than the precise scope of the program, is the need to design the program to ensure that consumers can understand what is included and what is not in the program. Experience

Implement EPR: Marbek and Enviro RIS, Draft 2001.

suggests that programs that address only a subset of a group of similar products may not work well because consumer uncertainty regarding what to return can deter participation. Similarly, a program that overlaps with another program may also cause confusion and deter participation.

Finally, it is important to ensure that the program has adequate scope not only to stimulate secondary markets (as noted above), but also to support a cost-effective collection and disposal infrastructure. This depends in part on the type of products covered and in part on the geographic scope of the program, an issue addressed in the final session.

3. ISSUES FOR THE SESSION ON EPR PROGRAM DESIGN AND MECHANICS

EPR Levers

There are numerous possible levers that can be used to trigger an EPR program. These include:

- A requirement for a stewardship plan;
- Mandatory take-back;
- Targets for collection, re-use or recycling levels;
- Recycled content requirements;
- Substance bans;
- Land-fill bans; and
- Various financing options (see next section).

One of the key issues is whether to stipulate all the details of the program design or just to require take-back while allowing relevant “producers” to develop their own program. A growing number of Canadian programs follow the latter model, requiring designated producers to prepare and submit a plan illustrating how they will discharge their stewardship obligations, individually or collectively.

Crafting these requirements so as to ensure **continuous improvement** can be challenging. In some cases, the EPR program itself may establish market dynamics that create appropriate incentives. In other cases, it may be necessary to establish progressively more stringent targets.

Free Riders and Orphan Products

Precluding **free riders** typically requires a clear, collective allocation of responsibilities, together with appropriate monitoring and enforcement/penalty mechanisms.

In some cases, it may also be necessary to address **orphan products**. In the case of products with long life spans, for example (cars, electronic goods, rechargeable batteries, etc.), the allocation of

responsibilities for new, existing and orphaned products is essential. European countries have taken various measures for cars (differentiated timing and recycling rate requirements for new and existing cars) and for electronic goods (applying old-for-new rules, making the last owners pay or making all existing producers responsible for existing products). Where it has been applied, the “last owner pays” approach has resulted in no differences between new and existing products and overcomes most orphaned product issues. However, this approach creates a significant disincentive for participation, and has resulted in low participation rates and continued disposal in municipal waste streams and illegal dumping.

Voluntary or Mandatory

Another important issue involves the nature of the program: will government leave it to industry to implement producer responsibility measures without any government leverage (voluntary), will there be a government-industry agreement stipulating roles and responsibilities, or is a regulation required?

There is considerable literature and documentation concerning the relative merits of each of these approaches, and this paper does not provide an exhaustive review of all relevant issues. In general, it has been observed that affected businesses are more likely to initiate and continue to implement EPR programs voluntarily where:

- the end-of-life product has sufficient value to make take-back at least a break-even proposition;
- participation in an EPR program has the potential to enhance brand-loyalty; or
- there is consumer demand for improved end-of-life management, and the market can differentiate among products on this basis.

IN THE ABSENCE OF THESE MARKET DRIVERS, “VOLUNTARY” ACTION IS UNLIKELY TO OCCUR EFFECTIVELY WITHOUT A CREDIBLE THREAT OF REGULATORY INTERVENTION. AND IN MANY SUCH CASES, ALL PARTIES MAY PREFER A NEGOTIATED APPROACH AS IT PROVIDES A MECHANISM TO DELINEATE ROLES AND RESPONSIBILITIES CLEARLY, WITHOUT THE PERCEIVED TRANSACTION COSTS ASSOCIATED WITH A REGULATION.

Experience also indicates that mandatory EPR programs tend to be more effective than voluntary ones relative to various considerations. For example, voluntary action is unlikely to be effective where there is significant threat of free riders, which in turn can be enhanced by a large number of players. Indeed, a recent review conducted for the OECD identifies “a definite shift from voluntary initiatives of producers to the introduction of mandatory programmes by governments, or a combination of both” (Tojo et al, 2001, p.27). The primary reasons identified for this shift include the free rider problem and the apparent ability to achieve higher collection, reuse and recycling rates with mandatory programs. The review suggests that almost all voluntary EPR programs suffer from free riders, caused either by deliberate abuse by non-members or by confusion of consumers who return the products of non-members to the members only collection system.

Regulation or agreements can overcome these problems in many cases. For example, to avoid the free rider problem, regulation typically mandates that all producers of the product must be either individually responsible or participate in an approved collective system. Similarly government involvement in helping enforce a program against free riders, either through an agreement or legislation, can enhance collection and recycling rates. In addition, EPR programs with goals or mandates set by or negotiated with government for collection and recycling are able to produce better results than programs without such goals, unless there are other, significant incentives for participation.

Example guidance on the use of voluntary environmental measures

Various documents provide guidance on the use of voluntary/non-regulatory measures by government to achieve environmental objectives. Frequently cited considerations include:³

- Reasonable expectation of sufficient participation over long term to achieve program's objectives
- Supportive policy and regulatory framework
- Capacity of participants
- Scope of the problem to be addressed (voluntary approaches may be more effective than regulations for addressing hard-to-define, complex problems)
- Level of risk posed by the issue (voluntary action may not be appropriate where certainty of outcomes are desired)
- Affected sectors have a good environmental track record, indicating a high likelihood of good performance
- High level of interest in affected sector(s)
- Support from external stakeholders

Other Design Issues

In some cases – particularly those involving hazardous waste – it may also be important to ensure that the program enables participants to demonstrate **due diligence**. For example, users of computers and other electronic equipment may need to be able to demonstrate that their discarded products have not gone to a landfill, and may therefore need the PRO to be able to document the fate of the discarded material.

In addition to the specific requirements incorporated into the EPR program, it is also very important from the outset to ensure an **effective collection system**. Where possible, it often makes sense to build on existing collection systems. In some cases, however, it may be necessary to develop new or significantly enhance existing disposal mechanisms and infrastructures. In either case, it is essential to consider carefully the role of the relevant municipalities as early as possible in the design process.

Finally, ensuring that the PRO has adequate capacity to oversee the program should also be considered in the early program design stages.

³ See, for example: Environment Canada's *Policy on Environmental Performance Agreements*, 2001 and the New Directions Group's *Criteria and Principles for the Use of Voluntary and Non-Regulatory Measures to Achieve*

4. ISSUES FOR THE SESSION ON FUNDING MECHANISMS

Funding Mechanism Options

Whether mandatory, negotiated or voluntarily implemented, EPR programs can be financed by various options, including:

- Producer take-back schemes in which the producer incorporates take-back costs into the product price;
- Deposit-refund schemes;
- Industry levies;
- Feebates (tax plus rebate);
- Leasing/servicizing arrangements.

In most cases, these options can either be mandated by the program's enabling regulation or agreement. Alternatively, they can be developed and imposed by participating producers as a mechanism to help them cover the costs of their take-back responsibilities. In some cases, a hybrid model may be possible, with the government prescribing a revenue target, but not the specific levy amount or even the mechanism for collecting it.

Considerations

The primary consideration in selecting the funding mechanism is the program objective. Other potentially relevant considerations include:

- Ensuring adequate funds to operate the program, including reserve funds;
- Impact on design-for-environment (DfE: see below);
- Competitiveness impacts on the participating industries;
- Trade law considerations; and
- Protection of consumer interests.

It is very difficult to identify generic lessons about EPR financing mechanisms, as it is clear that the appropriate financial mechanism depends on the type of product. There are, however, various issues that most programs need to address. A recent international survey of EPR programs conducted for the OECD emphasizes the importance of ensuring that EPR financing schemes reflect the nature of the product and its market (Tojo et al, 2001). For example, for durable, relatively simple products, collective financing schemes with advance fees on new products can more accurately reflect the costs of collection and recycling old products than for durable, complex products. By contrast, for durable, complex products, systems with individual producer financial responsibility for collection and recycling provide an important

Environmental Objectives, 1997.

opportunity to stimulate design changes that ultimately minimize the costs of recycling. However, such systems can fail to address orphan products, can require more sophisticated collection systems, and can make enforcement of collection and recycling goals difficult.

Although the evidence is mixed, it appears that it may be very difficult to design a financing mechanism that both fosters high take-back/return rates as well as stimulating design for environment. For example, in theory an end-of-life (or last-owner-pays) financing system, when coupled with individual producer responsibility for recycling, should create incentives for changes in product design to reduce the costs of reuse and recycling. However, such fees can create a disincentive for consumer participation. As a result, most experience to date suggests that an EPR program, on its own, typically will have little direct impact on DfE, and should be supplemented with other, more DfE-specific measures. In particular, mandatory recycling rates and material bans appear to be particularly effective in stimulating DfE.

Unresolved issues related to using EPR programs to stimulate DfE

Most evidence to date suggests that few existing EPR programs, on their own, contribute significantly to DfE. However, it is not clear whether that is because few existing programs were designed to promote DfE – as opposed to other objectives, such as diverting specified end-of-life materials from municipal waste streams, for example – or whether it is simply not possible to design EPR programs to influence DfE.

Specific unresolved issues include:

- How does the allocation of the program costs throughout the supply chain affect DfE incentives?
- What kinds of financial incentives are employed by EPR programs to encourage DfE and product recovery, and how successful are they?
- Do provisions such as minimum funding thresholds for producers, prohibitions for passing fees on to consumers, etc. that create DfE incentives?

One difficult challenge that many programs have confronted is how to foster competition on environmental performance in the market place, while at the same time establishing collective industry responsibility through a PRO. Ideally, a program will stimulate competition among producers seeking to lower the program-related costs of their products. Similarly, the effectiveness of many programs will depend on their ability to foster competition within secondary markets (i.e., among recyclers, etc.).

In many cases, economies of scale and the desire to simplify negotiations and avoid free riders will support the establishment of a single PRO. In such cases, it is nonetheless important to avoid any conflicts with relevant anti-competition provisions. A common Canadian approach to this issue has been to require designated producers to prepare and submit a plan illustrating how they will discharge their stewardship obligations, individually or collectively. By not explicitly requiring the establishment of a single PRO, this model leaves open the option that an individual producer may act on its own or that a subset of producers will establish a separate PRO, thereby leaving open the possibility for competition among PROs and avoiding any potential anti-competition concerns.

Another issue is whether or not to make fees and other sources of revenue transparent to the consumer. Some proponents suggest that transparent funding mechanisms such as advance disposal fees can make it easier and more attractive for producers to participate. Some also argue that transparent funding/cost mechanisms can strengthen the ability of consumers to send signals to producers in favour of DfE. Consumer transparency is not always easy to ensure, however. And some commentators argue that it may not always be appropriate. For example, in cases where a levy is applied to brand owners, is it necessary or appropriate to ensure that the levy remains transparent to the retail consumer? Some programs explicitly prohibit passing take-back levies on to consumers at the point of retail. More generally, some commentators emphasize accountability for revenues and expenditures through financial reporting mechanisms, rather than ensuring transparency through the retail transaction.

5. ISSUES FOR THE SESSION ON EPR PROGRAM GOVERNANCE AND ACCOUNTABILITY

Stakeholder Involvement

Ensuring long-term, high-level commitment by all affected stakeholders is the first and most important step in developing a workable EPR program. Typically, this requires extensive consultations and the development of a common vision. It is important to ensure that all stakeholder groups are included in this process. A wide variety of stakeholders may exist, depending on the nature of the program. Stakeholders, may include: industry trade associations; brand-owners, wholesalers, distributors, retailers, manufacturers, consumers, governments, environmental and other NGOs, recyclers, recycling brokers and other participants in the secondary market.

Just as stakeholder involvement is necessary in the program design stage (both to foster buy-in and to ensure the program design reflects the particular demands of the circumstances in which it will operate), similarly, the involvement of a range of stakeholders in the implementation of the activity can foster ongoing support for the program. There are numerous models for such involvement, ranging from regular public reporting, occasional public workshops, an advisory body or inclusion of stakeholders on the Board of Directors of the PRO.

Communication

There is also an obvious need to ensure effective communication between government and arms-length PROs. Some of the key issues that may need to be addressed through such a mechanism include:

- Reporting on progress towards relevant performance targets.
- Ensuring the PRO is operating as a non-profit entity.
- Resolving how to deal with surpluses generated by the program.

- Ensuring that funding collected through the program is dedicated to its original purpose.
- Ensuring that the PRO complies with relevant anti-competition laws.

Objectives and Performance Criteria

While the precise mechanisms for ensuring accountability and oversight can vary widely by program, all of the above require an appropriate statement of objectives and performance measurement criteria. As the Environment Canada “Guidance Manual” for PROs emphasizes: “[t]here are many methodologies for establishing performance measures, however, they are all based on developing measures as a result of asking ‘How will we know if we are successful in achieving our goals?’”

Typical performance measures for PROs include:

- Diversion from landfills;
- Reuse and recycling rates;
- Consumer awareness and education;
- Convenience of depots for consumers.

Once performance measurement areas have been established, it is necessary to identify specific targets and timelines. In many cases, these will be expressed as percentages or volumes over a period of time.

A key challenge arising from the growing number of EPR programs in Canada is how to ensure comparability among programs. Attention to this issue when selecting performance measures for PROs to report on will become increasingly important.

Recent work in the United Kingdom and elsewhere emphasizes the potential value of using “life cycle cost benefit analysis” to evaluate the environmental and economic performance of an EPR program (see, e.g., Sturges, 2001). Cost benefit analysis seeks to value externalities in monetary terms and to compare these against the internal costs of implementation. Although still an emerging discipline, life cycle analysis can greatly enhance the utility of a conventional cost benefit analysis by ensuring consideration of a more complete range of relevant impacts. In some cases, this approach can help decision-makers and stakeholders gain insight into the trade-offs within and between economic costs and environmental benefits that are inevitable in any EPR (or other environmental) program.

6. ISSUES FOR SESSION ON EPR APPROACHES AND PARTNERSHIPS

Over the past decade, provinces and industry sectors have worked to reduce waste through various economic and policy instruments. In response, numerous policies and programs have been developed to address post consumer responsibilities through EPR or product stewardship. In some cases, locally developed and implemented programs have been very effective. Local programs enable local governance and can help ensure that the program design builds on local collection systems and other local

circumstances.

In other cases, however, various stakeholders have urged the adoption of a more regional or national approach. The numerous benefits of such larger-scale, coordinated approaches include enhanced market power, the opportunity to ensure a “level playing field”, the potential for operational efficiencies, and the enhanced comparability across jurisdictions. The evolution of the used oil programs in the Prairie Provinces may be very instructive in this regard.

In Canada, the growing reliance on EPR programs and the emergence of different programs for similar products emphasizes the salience of this debate, and calls into question the possible need for a federal role on coordinating common approaches to EPR for various key issues.

7. CONCLUSION

There is a wide variety of EPR models and experiences throughout the world. This paper has reviewed some of the key design and implementation issues and experiences from Canada and elsewhere with the objective of contributing to the ongoing learning process about how to ensure the effective and efficient utilisation of EPR concepts and applications.

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