



Stewardship Ontario

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Review of Fee Setting Model

Discussion Notes for Consultation Session

May 26, 2011, 9-12 pm

1) Background

When Stewardship Ontario was calculating fees for 2011, packaging suppliers and stewards for paper-based cartons proposed a change to the fee setting methodology that would reward some paper based packaging (gable-top and aseptic) for recent gains in the recovery of this type of material. However, concerns about this approach were expressed by stewards of other types of paper based packaging (paper laminates such as such as drink cups and ice-cream containers), which would be negatively impacted by the change. These stewards noted that, while much effort had been put into improving recovery of paper laminates, progress was not possible because municipal governments refused to add these materials to their recycling programs. Furthermore, it was argued that resistance to adding the material was reinforcing consumer perceptions that the material could not be recycled, compromising efforts to promote recycling outside of the home.

In response, Stewardship Ontario initiated a review of the current state of recycling for paper-based composite packaging to generate a common set of facts to inform consideration of possible changes to fee setting. Click [here](#) to read the Draft Kelleher Report.

Stewardship Ontario also reviewed comments received in the fall of 2010, in which concerns were raised about how the changes to the fee setting methodology might impact the competitiveness of packaging formats that have comparable recycling performance, but are made from different materials. It was noted that a change in the formula could exacerbate the price difference that already exists between polystyrene and paper-based drink cups.

In addition, Stewardship Ontario has taken into account the following factors:

- The principles under which the formula was originally designed, and whether the formula generates the intended material price signals ,
- The principles and impacts associated with the aggregation of material categories,
- How the blue box program has evolved, and marketplace changes that have impacted consumer perception of blue box recycling,
- Stewardship Ontario's efforts to develop markets for recyclable materials,
- Stewardship Ontario's commitment to work with other provinces (notably Quebec and Manitoba) to harmonize the "steward experience" as much as possible.

The objective of this review has been to further Stewardship Ontario's primary goal: that costs of the blue box program be allocated among stewards and materials in the most fair and equitable manner possible, while meeting the objectives of the program and the Waste Diversion Act.

This paper outlines Stewardship Ontario's review of the above noted points, and outlines several options and questions for consideration.

This paper is intended to prompt discussion only. At time of writing, no conclusions or recommendations have been reached.

2) Required Process for Changes to the Fee Setting Methodology

The Fee Setting Methodology is the formula that is used to calculate fees for each material included in the blue box program. Absent any changes to this formula, fees are determined on an annual basis by applying objective input data (program costs, material cost allocations, material recovery rates, etc) to the formula.

Changes to the Fee Setting Methodology involve issues of judgement, fairness and principle, and is an opportunity for Stewardship Ontario to give due consideration to the concerns and viewpoints of the affected parties, particularly since any change that reduces fees for some stewards, by definition, increases fees for others. In other words, the program's costs constitute a "fixed pie" that is apportioned amongst all stewards. If one group of stewards pay less, it means that other stewards pay more.

Changes to the formula must be approved by the Minister of the Environment, and the Minister typically undertakes his or her own consultation (Such as an EBR posting) before rendering a decision.

3) The Next-Least-Cost-Tonne

Ontario's blue box program encompasses a wide range of consumer packaging. Some types of packaging, such as cardboard boxes, represent a large proportion of total amount of packaging in the system, and have been recycled at a high rate and at comparatively low cost per tonne for decades. Other materials, such as plastic bottles, are at or near the program recovery target, but have not been quite able to match the 90%+ recovery rate achieved by cardboard. Other materials have had more recent successes (such as gable top containers and plastic tubs and lids) but still perform well below the overall recycling target. Finally, materials such as clamshell packaging, polystyrene foam, plastic film and paper drink containers have been the subject of much hard work by industry stakeholders, but to date still lag behind the overall recycling target.

Economic considerations have driven this reality. Both Stewardship Ontario and its municipal partners are motivated to improve the overall performance of the blue box program at the lowest possible cost.

Over the first 8 years of the program, this has meant focusing effort on materials which (1) are comparatively inexpensive to recycle and (2) are not currently collected at the highest level possible. In other words, municipalities, supported by Stewardship Ontario, have sought to improve performance by putting most of their effort into capturing more of what they are already recycling successfully – i.e. the “next least cost tonne” approach.

The concept of “next-least-cost-tonne” creates the first challenge for the blue box fee setting methodology: namely, how to promote cost-effectiveness while advancing the objectives of waste diversion. If fees were determined strictly on the basis of costs, materials recycled at the highest rate would have the highest fees and materials recycled at the lowest rate would have the lowest fees. Materials that were not recycled at all would not pay fees at all. A simple cost-based model would therefore create incentives for stewards to use packaging that was not being recycled – directly in conflict with the objectives of the program.

The current fee setting formula therefore uses cost and recovery statistics to reward materials with high recovery rates while sharing costs equitably among all materials participating in the program. In effect, materials with lower recovery rates pay for part of the cost of recycling material with higher recovery rates. It does this by use of a “three factor formula” whereby:

- Factor 1: 40% of the cost of the program is assigned to each material category based on how much it costs to manage each material in the system
- Factor 2: 35% of the cost of the program is assigned based on the recovery rate achieved by that material
- Factor 3: 25% of the cost of the program is assigned based on how much it would cost to manage the material, if it were recovered at a rate of 60%.

Stewardship Ontario has reviewed the performance of the three factor formula, and confirmed that it generally performs as intended. In other words (all other factors being equal):

- An increase in the recovery rate for a given material category will result in a decrease in the fee rate for that category

- A decrease in net cost per tonne for a given material category will result in a lower fee rate for that material category.

However, the relationship between fee rates, recovery performance and costs for each material type is not absolute, due to two characteristics of the formula:

- The “Recovery Rate Effect” of the 3-factor calculation, which results in materials with low recovery rates absorbing a disproportionate share of any increase in total system costs.
- The “Low Volume Effect” of material aggregation, which mutes the fee decrease one would normally expect from a substantial improvement in recovery when low volume materials are aggregated with higher volume materials.

3a) The Recovery Rate Effect

Given that 60% of the fee rate for each material is determined by its recovery rate, this means that as the cost of the system grows over time, materials with the lowest recovery rates tend to absorb the largest share of any increase. Accordingly, as costs have increased harder-to-recycle materials have been assuming a growing proportion of the total cost of the system, despite the fact that recycling rates for many of these materials have improved.

For example, since 2008, the Steward obligation for blue box recycling has increased by about 38%. Over the same time, the fee rate for PET bottles (which has a high recovery rate) has increased by about 23% and the fee rate for gable top and aseptic containers has increased by almost 90%. Over the same time period, the recovery rate for PET bottles has remained fairly constant, while the recovery rate for gable top containers has increased from 15.5% to 26.9% and aseptic containers from 14.2% to 22.7%.

Cost increases over recent years have been driven to some extent by changes in the mix of materials being collected in the blue box, with more-expensive and harder to recycle materials becoming a larger share of the total. It is not unreasonable to expect fees for more expensive material to rise more than other materials, as their share of the stream increases and therefore their materials play a very significant role in the rate at which overall costs are increasing. Furthermore, despite recent gains, these harder-to-recycle materials are still well below the mandated 60% recovery target.

Nevertheless, changes in the material mix are not the only reason costs have increased, and the Recovery Rate Effect does raise questions about whether or not the formula should be adjusted to temper the share of total costs borne by harder-to-recycle materials.

3b) The Small Volume Effect

While Stewardship Ontario has confirmed that the formula generally behaves as intended, the formula responds in proportion to the total volume of material in the system. In other words, a material recycled in large volumes will see a significant swing in fees as recycling performance or costs change in relation to other materials. However, a low volume material will not respond as well. A very low volume material may not respond at all, since a doubling of performance of such a material could represent a very marginal change in overall system performance.

For example, while the recovery rate for gable top containers has increased from 15.5% to 26.9% and aseptic containers from 14.2% to 22.7%, since 2008, this has increased material recovery only by about 2,100 tonnes, which is less than 1% of the total amount of paper packaging recovered in the blue box and less than 0.5% of all packaging recovered.

One could argue that any “reward” for increased performance should take into account the extent to which the improved performance of a particular material contributes to overall performance of the program. That said, just because a material is generated in small volumes does not mean that it should be shut out of any opportunity to be rewarded for performance. Absent any reward for achieving improvements in performance, there is little incentive for stewards and packaging manufacturers to make the investments necessary to improve recycling performance.

4) Material Aggregation

The final step in calculating fees is “material aggregation”. Although cost and recovery are calculated for each discrete material category on which stewards report, when calculating the final fees, certain material categories have been aggregated based on three objectives:

1. Policy Objective

Would aggregation and/or disaggregation promote increased diversion by rewarding materials that have higher diversion rates?

2. Operational Objective

Are the materials managed in a similar manner in the reverse supply-chain (i.e.: can we group “like with like”)?

3. Fairness Objective

To what extent are different diversion rates and/or handling practices a function of the inherent characteristics of the packaging material, and their comparative “recyclability”?

Decisions about how materials are aggregated have significant implications for fee rates that are paid for individual materials, and as a result, material aggregation has long been a subject for discussion during the fee setting process. Any form of aggregation blends the effects of costs and recovery rates among materials, and questions arise from time to time about how these aggregations are arrived at, particularly when costs and/or recovery rates diverge for subsets of materials within a category.

The two most significant material aggregations in the current formula are for “composite paper packaging” and “other plastics”. In both cases a material subset is showing a significantly higher rate of recovery relative to other materials in the category. “tubs and lids” are the standout in the “other plastics” category and gable top and aseptic containers are the standout in the “composite paper” category.

The aggregation of the composite paper category was raised during the 2010 fee setting cycle. Stewards and packaging manufacturers for gable top and aseptic packaging put forward a proposal to disaggregate the gable and aseptic containers from the composite paper category, based primarily on the objectives noted above.

At present, three material categories (1) gable top containers (typically used for milk and juices), (2) aseptic containers (typically used for juice, milk and other liquid food products) and (3) laminate paper packaging (a broad range of materials dominated by hot and cold drink cups, ice cream containers and spiral bound food containers) are aggregated together to form the “composite paper packaging” category. The gable top and aseptic containers make up about one-third of the total “composite paper” category, and composite papers make up about 16% of all paper based packaging.

The proposal was deferred based largely on a lack of consensus around the third objective, and conflicting information on the state of composite paper recycling in North America today. Instead, Stewardship Ontario commissioned a third-party review in order to build a common understanding of the current state of recycling and to inform any potential change to the fee setting methodology.

This research revealed a number of key facts:

- Technology exists within North America to process the three major types of composite paper packaging, and the fibres for each type are in demand.
- Unfortunately, each material has different characteristics that impact the recycling process in different ways, and therefore processors prefer separated bales of material. There is no processor that welcomes a mixture of all types of composite paper packaging.
- The recovery rates for gable-top and aseptic containers have indeed increased substantially in recent years, in large part due to the fact that they are comparatively

easy to sort out of the recycling stream and as a result most Ontario blue box programs now accept them.

- While recovery rates for gable-top and aseptic containers have increased, they represent a comparatively small proportion of the total stream of composite paper packaging. This means that achieving a material improvement in the performance of paper packaging will require strategies to capture and recycle a broader range of the Composite Paper category.

In fact, the research reveals that the “composite paper” category is very similar to the “mixed rigid plastics” category, namely:

- It consists of a broad mixture of materials whose value would be maximized if separated into streams of similar material and collected in greater quantities,
- One subset of the material (in this case plastic “tubs and lids”) increased in performance ahead of other materials included in the mix, but the “emerging” subset of is still well behind the 60% program target, and
- Achieving a material improvement in overall program performance will require substantial improvements in recycling for all materials in the category.

5) Competitive Package Formats

Suppliers of product packaging have also noted that steward fees can impact the competitiveness of various types of packaging, where different material types are used to manufacture similar packaging for a similar purpose. Examples include egg cartons (plastic versus paper), drink cups (polystyrene versus laminate paper), and food containers (steel cans versus aseptic cartons).

6) The Evolving Marketplace

The consumer marketplace has undergone significant changes in the years since the Waste Diversion Act was established and stewards first began to share in the cost of operating the system. The changes that have had the most impact on the blue box program are as follows:

- Consumers have become more environmentally aware, and are more willing than ever to make choices based on their view of environmental sustainability.
- Consumers tend to reach conclusions about environmental sustainability based primarily on “recycling”. This means that consumers form positive opinions of

packaging they can recycle through their blue boxes, and negative opinions of those that they cannot.

- Global business has been making substantial investments in improving the environmental sustainability of their business operations, in large part by introducing packaging innovations that are designed to reduce packaging, lightweight products and facilitate more energy-efficient supply chains.
- Unfortunately, the blue box infrastructure does not currently respond and adapt as fast as business can introduce new package innovations, and therefore business efforts to improve sustainability sometimes result in the marketing of products in packaging that is not accepted in Ontario's blue boxes.
- Consumers tend to react negatively to packaging they cannot put into their blue boxes, particularly new forms of packaging. As a result, becoming sustainable can sometimes create a sustainability-related consumer backlash, or worse, claims of "green-washing".
- The pursuit of "next-least-cost-tonne" by definition contributes to the blue-box system's inability to respond in a timely way to packaging innovation.

This evolution in the consumer marketplace is making it more and more difficult for some stewards to justify paying fees to defray the cost of easy-to-recycle materials, under the principle of next-least-cost-tonne, when their customers are complaining that they cannot recycle their packaging. Worse still, consumer perceptions created by the fact that the packaging is not accepted in the blue box (i.e.: that the material is not "recyclable") compromises efforts by these stewards to recycle the material outside of the home.

7) Developing Markets for Harder-to-Recycle Materials

For its part, Stewardship Ontario has been working to find markets for many of the harder-to-recycle materials, in an effort to reduce the net cost of capturing and recycling the more expensive categories of material, and broaden the range of packaging types that are successfully recycled via the blue box.

In 2006, Stewardship Ontario initiated comprehensive research into how it might recover and recycle rigid plastics and film. This research led to the development of a \$9 million Plastics Market Development Fund to develop processing technology and markets, and foster the development of an environmentally and economically sustainable supply chain for plastics. Significant investments were made to help establish two new processing companies: Entropex and EFS Plastics. Both of these investments are proving to be successful, and are now supplying high-value polymers to

Ontario's manufacturers who are in turn creating new consumer products for national sale and distribution. Plans are under way to expand capacity at both facilities.

Stewardship Ontario is currently conducting research into opportunities to replicate this success for the composite paper packaging category.

8) Program Harmonization

Stewards repeatedly urge Stewardship Ontario to do what it can to reduce differences between the various stewardship programs and, as much as possible, "harmonize" the steward experience.

Stewards interact with the various programs most often when reporting and paying fees and when evaluating and responding to proposed program changes, such as changes to rules and fee setting methodologies.

Stewardship programs tend to diverge when considering changes to rules and fees, in particular when these changes impact how stewards report data. Accordingly, an evaluation of potential changes to Stewardship Ontario's fee-setting methodology should take into account potential impacts on harmonization.

9) Questions

What does all of this mean? First and foremost, it means that satisfying all of the competing demands on the blue box program is very difficult. Perfection is virtually impossible, and even "continuous improvement" is an enormous challenge, since what is seen as an improvement by some could be viewed as a step backward by others.

All of these conflicting demands raise a number of key questions:

- Although the current methodology did undergo a comprehensive review in 2006, do consumer and marketplace trends and challenges suggest we need to undertake another fundamental review?
- Are there modifications that we can make to the formula that do represent "continuous improvement" toward our ultimate goal of sharing costs fairly and equitably?
- Should we do more to reward materials that achieve a substantial improvement in recycling performance?

- Should the amount of the “reward” be influenced by the extent to which the improvement in recycling performance contributes to the overall performance of the blue box system?
- Should a material that improves performance be expected to achieve a specific threshold (say 20%, 30% or more) before realizing a “reward”?
- Should the fact that neither individual stewards nor Stewardship Ontario determine what materials are collected for recycling be factored into any decisions about how to reward materials that achieve an increase in performance?
- Should a material aggregation continue to be an aggregation of similar materials, or should we instead look to aggregate materials with similar performance (regardless of material type)?
- Should we (and can we) consider the “competitive set” for each packaging type?

10) Options

In light of the issues raised in this paper, Stewardship Ontario is interested in obtaining input on the need for a comprehensive review of the fee setting formula. In the meantime, Stewardship Ontario has made a commitment to consider the disaggregation of the composite paper category and consult with stakeholders on such changes.

The original proposal from stewards and manufacturers of gable top and aseptic packaging would have the following impact on fees for composite paper packaging.

Disaggregating the Composite Paper Category				
Material		Current Rate (¢/kg)	Revised Rate (¢/kg)	Change (¢/kg)
Gable Top		22.04	15.34	(6.70)
Paper Laminates		22.04	27.52	5.48
Aseptic		22.04	15.34	(6.70)

After considering comments from various stakeholders, the results of the research into recycling of paper packaging, and the issues raised in this paper, Stewardship Ontario has explored a number of options for incremental improvements to the fee setting methodology.

Two such options are presented below. Each would “reward” paper based gable top aseptic packaging and plastic tubs and lids for improvements in recovery that have been achieved in recent years, but by less than the amount that would be realized if the materials were fully disaggregated into their own material categories.

The first option would create a new principle for material aggregation, grouping together materials that have achieved improved performance. The second option is a simple compromise on the proposed disaggregation of the composite paper category, applied also the other plastics category.

Option 1: The Progressive Improvement Model: Create two new categories of hard-to-recycle materials, and calculate a partial disaggregation of 50%. Those categories would be:

- “Emerging Materials”: materials that have historically been recycled at a very low rate, but which have achieved significant improvements in recycling performance in recent years (such as gable top and aseptic paper containers and plastic tubs and lids); and
- “Materials in Development”: remaining hard-to-recycle materials in both the plastic and paper packaging categories (such as plastic clamshells and hot drink cups and ice cream containers)

Progressive Improvement Model				
Material	Category	Current Rate (¢/kg)	Revised Rate (¢/kg)	Change (¢/kg)
Gable Top	Emerging	22.04	20.33	(1.71)
Paper Laminates	Development	22.04	25.85	3.81
Aseptic	Emerging	22.04	20.33	(1.71)
Plastic Film	Development	24.89	25.85	0.96
Plastic Laminates	Emerging	24.89	25.85	0.96
Polystyrene	Development	24.89	25.85	0.96
Other Plastics	Development	24.89	25.85	0.96
Tubs and Lids	Emerging	24.89	20.33	0.96

Option 2: The Compromise Model: Partially disaggregate gable top and aseptic containers from the laminate paper products (at 25%) and tubs and lids from the other plastics (at 75%)

Compromise Model				
Material	Category	Current Rate (¢/kg)	Revised Rate (¢/kg)	Change (¢/kg)
Gable Top	Composite Paper	22.04	18.62	(3.42)
Paper Laminates	Composite Paper	22.04	24.67	2.63
Aseptic	Composite Paper	22.04	18.62	(3.42)
Plastic Film	Other Plastic	24.89	26.25	1.36
Plastic Laminates	Other Plastic	24.89	26.25	1.36
Polystyrene	Other Plastic	24.89	26.25	1.36
Other Plastics	Other Plastic	24.89	26.25	1.36
Tubs and Lids	Other Plastic	24.89	21.15	(3.74)

11) Next Steps

We look forward to discussing these issues with participants at the consultation on May 26th and we invite you come prepared to offer your comments during the session. We will also encourage stewards to provide us with their written comments following the May 26th consultation.