

Global Package Recycling Mandates Cost or Opportunity?

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Recycling policies worldwide are having an impact on the design of packaging. While most American manufacturers see recycling policies as a "compliance" issue which costs them money, a few savvy companies are finding that if they do their homework on regulations, and use current technologies available, they can reduce their costs, as well as achieve company environmental goals. In fact in some cases, "producer responsibility" or EPR laws for packaging have inspired companies to push the limits for source reduction.

This paper I will review:

- What's new with package recycling policies worldwide
- Effects of producer responsibility laws in Europe
- Case histories from major US and British firms on environmental packaging
- U. S. versus European, Japanese approaches

U. S. Background

In the early 1990's, packaging -- especially plastic packaging - was under attack in the U. S. There were hundreds of state bills introduced that would have banned or required "rates and dates" for packaging. Under special attack were plastic bags because of marine issues and litter - they did not degrade - and retail polystyrene (PS) foam.

When the dust cleared in 1994, manufacturers had managed to defeat all but a few laws. What remained were a few degradable bag laws, which were later repealed, a number of city level PS foam recycling mandates. Oregon, California and Wisconsin did enact recycled content mandates on rigid plastic packaging (RPCs). However, Wisconsin did not enforce its law, and Oregon never had to because industry always met the required 25% recycling rate (deposits

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enabled this). The attacks did affect use of certain plastic resins - namely polyvinyl chloride and polystyrene.

California is the only state which ended up enforcing its recycled content mandate¹⁾, because until 2002, industry did not meet the required 25% recycling rate. The law requires use of 25% postconsumer recycled content in RPCs 8 ounces to one gallon - or 10% source reduction or make the container reusable. The state has tried to certify about 1,500 manufacturers, and continues to struggle with smaller firms this year. We note that the state has not tried to enforce this law on any foreign manufacturer - we presume they would have some GATT problems.

Meanwhile - EPR Laws Pass Around the Globe (but NOT in the US)

So as the legislation died down, U. S. manufacturers lost interest in environmental packaging issues. Meanwhile, Germany enacted its famous packaging ordinance in 1991. This remains the most stringent and most expensive takeback system in the world. It is one of the few that requires direct takeback from manufacturers - government is not involved with collection. The packaging directive was enacted in Europe (1994) and the European manufacturers found themselves saddled with a \$15 billion takeback system in 25 countries. Most American companies preferred to relegate compliance with the European laws - and their pesky fees - to their distributors or European managers. The fees and policies vary widely from country to country.

Today, there are takeback laws for packaging in 31 countries, including Canada. There are packaging collection fee systems in more than 25 countries, including Asia. As the Ascension countries move to gain acceptance to the European Union, the Eastern European countries are also adopting laws with fees and collection organizations.

Taiwan, Korea and soon China have very different package recycling laws, which they are expanding this year.

Plastics Under Attack Again...

But lets get back to the U. S. for now.

Today, there are about 9,000 curbside recycling programs in the U. S. We are recycling about 22% of our municipal solid waste (MSW), including much commercial waste, (excluding composting). Our MSW is dwarfed by our construction and demolition waste, and our industrial waste - but those are not sexy issues in the U.S.

Recycling legislation has become more of a hot issue in North American this year, for two reasons :

1. **General Frustration** - Plastic resin producers have mismanaged the issue in the U. S., and have abandoned their 25% recycling goal for all plastics. Producers gave up trying to run recycling plants themselves, and there is no coordinated national program. Beverage makers remain staunchly opposed to any bottle deposit legislation to improve the PET collection rates. States are frustrated they are not achieving recycling goals (only 11 are achieving goals) - and at least in California, plastics are under attack again. Plastic bag restrictions in Ireland and Taiwan seem to be inspiring governments around the world to look at plastic bags as well. The marine issue is arising again, and California activists want a fee on disposable cups and bags !
2. **Canadian Provincial Laws:** Ontario enacted Bill 90, and Quebec passed a similar law. These laws allow the Province to require takeback of just about anything, and for industry to reimburse local governments to 50% of their costs of curbside recycling programs. *This will be the first time North American manufacturers will have to track and weigh the packaging to pay fees.* This is also the first time extended producer responsibility will be enforced on a Provincial level, as opposed to a national level The implementation of the law has become quite convoluted, and the big brandowners that supported the legislation are now up in arms. Industry portion of the curbside bill is now expected to zoom to about \$60 million (CDN) by 2005. (See table in Appendix)

No Place to Export?

The big focus in the U. S. is currently on electronics waste - there are now 52 bills in the hoppers of 26 states on this subject. There has been major press on the topic, and local governments are pressuring state lawmakers to pass electronics waste takeback laws - they don't want to pay for collection or recycling.

However, interest in this topic has not stopped California activists from keeping the pressure on plastic packaging.

Moreover, an expose on poor working conditions of family enterprises in China who disassemble electronics waste is having a global impact on policy, which will be affecting packaging as well. To wit :

1. New draft amendments to the packaging directive in Europe include provisions that disallow exports to count towards recycling rates unless the exporter can prove that working conditions in the receiving country are comparable to Europe

2. China is passing new regulations that not only require EPR on electronics, but they have added plastic packaging to the list ! ²⁾

Deposits and Cash

Ten states currently have deposit programs - only California and Maine have expanded laws that cover most beverages. Hawaii recently adopted a new deposit law, somewhat similar to California's. California has a government-run system, and charges beverage makers extra for using glass and plastics. The law is being updated this year again to provide an incentive for companies to use PET or HDPE instead of less recycled plastics; and to increase the deposit amount.

Nearly all Canadian Provinces except Ontario have bottle deposits - most of them expanded to include even aseptic and milk jugs. Unlike the American systems, the Canadian beverage makers cooperate with each other on joint systems, which keeps their costs at less than half of the U. S. per container³⁾.

This year, local and state governments are strapped for cash, as the economy sags. Thus it is not surprising that there are 70 bottle deposit bills in state hoppers. Few bills will make progress, as the beverage industry will do what it takes to defeat such measures. Not surprisingly, a number of states are raiding their unclaimed deposit funds to make up for budget deficits. In good times, the beverage industry is sometimes forced to subsidize other recycling programs. In bad times, that money goes into the general fund.

Europe : Hanging on to Refillables?

While major beverage makers have managed to kill small refillable packaging systems in the U.S., brewers and other bottlers outside the U. S. have retained their refillables systems. The Ontario Canada brewers try to compete with US giants by various fees and voluntary deposit systems. The 1,200 brewers in Germany went farther - and now keeping them happy will be costing consumers dearly. The refillables quota of 72% , (for all beverages except milk) required under Germany's 1991 packaging ordinance, has not been met. Last year there were 100 lawsuits over whether the government could institute mandatory deposits on one-way containers, required under this law. The situation made your press here. When industry lost the battle, no one was prepared, so there is no national clearinghouse for one-way deposits, and consumer must return beverages to the same store to redeem !

According to a presentation from reverse vending machine maker Tomra at Take it Back! 2003,

4the new one-way deposit system will run about Euros 4 billion through it. That's on top of about \$2 billion spent on the dual system (DSD). Germany is one of the few countries in which manufacturers must ensure separate collection for all sales packaging - government has no financial responsibility.

There is also now one-way deposits in Denmark, - to replace the old can ban. But it seems that the marking requirements are so onerous, importers are just as discouraged. The Netherlands may have to institute one-way deposits in 2005 if litter mandates are not met by industry.

The German situation, which has cost jobs in packaging, is drawing attention throughout the continent, as there is much opposition to one-way deposits.

As you know, the EC is debating amendments to the packaging directive that will push the recycling goals up even higher - to about 55% by the end of 2006. This will probably force collection organizations to raise their fees to importers, as countries will have to collect about 39% more material⁵⁾.

Please note that the amendments will push the European countries to enforce the "essential requirements." This is one set of paperwork you cannot delegate- it must be done where the package is designed. You are supposed to assess each package as to its recyclability or compostability or burnability, etc. Currently only the UK, France and the Czech Republic⁶⁾ are enforcing this. CEN just recently finalized amended packaging standards for the ER, which we expect to be approved by the European Commission in 2004⁷⁾

ASIA : Adding to Mandates

CHINA : As we indicated above, China is attempting to crack down on illegal enterprises, and the government has announced it will require EPR on electronics, but it somehow added "non-ferrous metals" and "plastic packaging and containers" the preliminary list. It will probably legislate packaging separately from electronics later this year.

TAIWAN : Taiwan's government has announced it will expand the list of packaging that it included in its EPR scheme - which involves paying fees to a central fund. Taiwan has also banned various plastic bags - which has cost thousands of jobs - and has indicated it will also restrict disposable food packaging later in 2003. Taiwan also requires packaging reduction plans for electronics products. The EPA recently announced it was cracking down on transboundary movements of waste as well.

KOREA : Korea's government plans to expand its list of packaging subject to takeback for June 2003. This country also has empty space and layer restrictions, as well as restrictions on PVC

wraps and PS foam packaging, including transport packaging. Enforcement is uneven- and some companies are just paying extra fees on the EPS. However, fast food places have voluntarily started charging a deposit on disposable cups.

The Philippines has the authority to ban packaging, but has not used it so far. Most other Asian countries are trying to improve recycling, but do not want to upset large manufacturers because they want to continue attracting foreign investment so no fee systems are expected packaging any time soon.

Wood Packaging : Beetles Under Attack

The U. S. has a serious pest infestation problem from the Asian Longhorn beetle. It has destroyed thousands of trees in New York , Illinois as well as parts of Canada. We now require any wood packaging coming in from China/Hong Kong, etc. to be properly fumigated or heat treated for pests. A number of countries, including Australia, Argentina and Finland have adopted their own import regulations, and the European Union now also requires such treatment. While the IPPC has adopted new international standards for all wood packaging on a global basis, there was a copyright problem with the proposed "NO Beetle" graphic in the U.S., so the graphic at right was agreed to last spring.



The USDA issued a draft regulation to adopt the IPPC standard in late May.

American companies must now have all coniferous raw wood packaging for export be treated, inspected and stamped. Heat treatment for coniferous wood is 56C for 30 minutes or chemical treatment. Chemical pressure treatment has not been approved by the international standards committees, and renders the pallet non-recyclable. Methyl bromide is the least expensive treatment.

Green Labeling : Not Voluntary

More than 20 nations now require some sort of labeling requirements for various packaging. For example, in 39 U. S. states you are supposed to have the SPI plastic resin code on the bottom of the bottle for containers 8 ounces and up, molded in. The code differs slightly in the U. S. from that used in Europe. For example, we use PETE in the U. S. instead of PET because of a copyright issue. We also use V for PVC instead of PVC.

Of late, marking for Asian countries is getting more complex. In addition to the newly

required recyclable plastics and paper markings in Japan, South Korea now requires you to put yet a different symbol, with the appropriate resin abbreviation in the middle, with the words "separate, please" in Korean below it. Taiwan continues to require the four arrow symbol on certain packages.

The U. S. states are also passing mercury restrictions - there are about 65 bills in state hoppers this session. A number of states require mercury product labeling. While these labeling laws differ from each other slightly, it appears the states are deferring to the Vermont labeling law, and regional enforcement for Northeast states. Vermont also requires a labeling plan on some products. Al told, there are restrictions on mercury in 19 states.

Effects of EPR Systems

Reporters frequently ask me : *Do these EPR laws in Europe work?*

The answers are not simple. There is no perfect EPR law out there. The European EPR laws for packaging are expensive, and the amendments will cost billions of Euros more. One consultant estimates the current system is now costing industry about \$15 billion in Europe alone.

First of all, there hasn't been much real enforcement of the current packaging takeback laws in Europe, except for about five countries. It is up to the collection organization to go out and find "free riders" and get them to pay. I suspect many importers are simply avoiding any compliance when they can. Too many companies are relying on their distributors to guarantee compliance.

Even though the EC has not gotten around to studying if the packaging directive has actually helped the environment, studies from the trade group ASSURE indicate the laws have indeed reduced packaging put on the market, or at least slowed its growth in many countries. According to ASSURE :

- Packaging consumption declined 10% in Germany (1991 ~ 1998)
- Consumption declined 12% in the Netherlands (1986 - 1998)
- 18% reduction in Sweden (1993 -1999)
- Packaging waste declined up to 35% in some countries

However, ASSURE says that packaging consumption started to increase again between 1997 and 1998. We note that between 1990 and 1995, packaging consumption in the **US increased 13%**, despite source reduction efforts.

In terms of recycling, we know that Europe is obviously recovering more packaging than the U.S. , though it is difficult to get accurate figures because of differences between how material is

collected, and which countries count what. Overall, European countries said they were recycling about 47% of packaging in 1997, including 8% recovery of plastics. At that time the U. S. was recycling about 38% of packaging - we note with NO EPR mandates - and about 13% of plastic containers⁸⁾. We can only refer to containers in the U.S., because we don't really recycle other plastic packaging, such as yogurt cups, blisters, etc. A number of European countries do try to recycle all packaging, including aseptic and blisters. By now I am sure Europe is surpassing the US in collection of plastic packaging, though much of it still gets exported to Asia, like Western bottle scrap in the U. S.

So, it appears that the takeback laws have had a definite impact on the amount of packaging used in Europe. Even though consumption is going back up, industry sources say this is because the population is growing. What is clear is that the *laws have affected per capita growth in packaging use*.

Two other positive aspects of European packaging laws :

1. They have provided a stable funding mechanism for recycling of consumer packaging. In many countries, recyclers are guaranteed enough funds to continue operations even when markets are very poor. Moreover, in many cases, municipalities receive subsidies from the collection organizations to help them fund collection systems, without the political difficulty of raising taxes. In the U. S., local governments use property taxes to fund recycling in most cases (though about 2,000 use pay-per-can systems) and when budgets get tight, local governments will try to cut back on recycling. Recyclers and cities are at the mercy of commodities markets, so there are recycler bankruptcies in bad times.
2. European collection organizations must educate the public on recycling, at a national level. In the U. S., local governments are supposed to educate, and each program is collecting different commodities, so there are few opportunities for industry to help educate even if it wants to. Cities have little budget for education.

On the negative side, there is no incentive for anyone to actually use recycled material in products or packaging - except perhaps the fee system in France⁹⁾. Thus, much of the plastic material is shipped to Asian markets, as is the case in the U. S.

The problem is that some countries laws are a bit extreme - eg. Germany, and no one has really studied the true cost to industry. Moreover, no one has actually determined the environmental benefit from the packaging directive - the EC has not gotten to it.

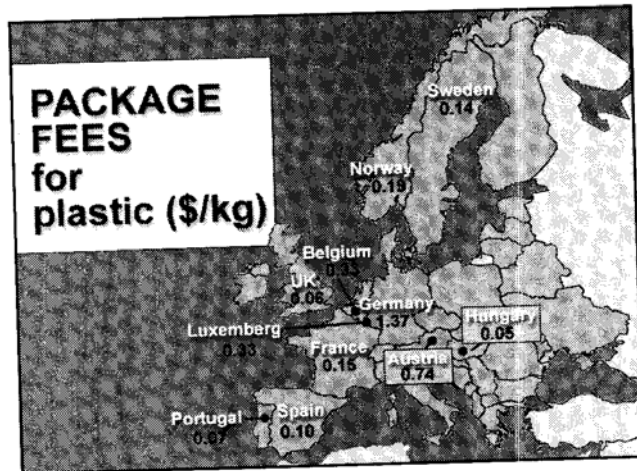
How Companies are Coping

As there have been no EPR mandates in the U.S., the driving force for American designers has

been only marketing and cost. Since the mid-1990's, there has been little pressure from the public or legislation to make packaging more environmentally friendly. In fact, you cannot even use the word "environmentally friendly" in the U. S. on a package under Federal Trade Commission guidelines. It is considered too vague.

Moreover, since most U. S. companies delegate responsibility for calculating package recycling fees to European distributors, there has been little effect on design that I can tell.

However, in some cases, it may be just as well. American companies continue to make new designs in plastic. Plastics fees are ten times as high as paper in many parts of Europe. There was a trend to use more paper dunnage - even in Japan - and use of more heavy paper packaging.



My customer at Hewlett-Packard complained that when they sell through a particular Japanese company in Japan, they must switch from EPS cushioning to paper, which is very expensive. The paper suppliers claim that some of the packaging fee systems discriminate against paper. On the other hand, the new draft Ontario Canada packaging fees end up favoring packages that are recycled less. (EG plastics) because the fees must be based on "fee for service." Thus, the less your material is recycled, the less you pay ! (See table in appendix)

From a transport and lifecycle standpoint, I am not convinced it makes sense to use paper for everything, especially if there are recovery systems in the country for the plastic version.

In the U. S., from a design standpoint, we see a trend to make packaging more clear - eg. moving from shadow boxes to all clear plastic. The cosmetics and beverage industries are discovering shrink sleeves because they add high color and major shelf presence. The shrink sleeves, even if they are not in PVC, tends to reduce recyclability of the package.

Even though the cosmetics industry pays some of the highest recycling fees in the world, we have not seen the recycling issue or fees having much impact on sales packaging design. In fact, cosmetic makers want a heavier package at times, to give the feeling of value - or disguise how little product is in the bottle! One of the leaders, Estee Lauder, spends \$3 million per year on package recycling fees alone. A bit ironically, while Estee spends millions to be in exact compliance with all recycling and labeling laws, its closest competitors do not even track the issue from headquarters in the U. S. !

The trend to clear packaging is even reaching the electronics sector. For example, HP has introduced a new clear PET printer package this fall. (We understand it flopped in the U. S. but is going well in Europe.) The company designed a special sealing system that enables re-closure. They also plan to use 10~25% postconsumer recycled content in the new mega-clamshell. Obviously, this is was not a cost-



saving move, but a bold attempt to gain market share and stand out. However, the company is confident the package is recyclable.

We find that companies are making very small reductions in sales packaging to save money. For example, Wrigley's saved \$300,000/year by reducing foil and paper thicknesses on its little blisters, and its switched to a PVDC layer. (See photo opposite)

We note that companies that do understand fee systems in Europe can save good money with rather subtle changes. For example, when you are using a laminate that includes paper, you can reduce your Germany fees 90% if you can get the non-paper layers to 5% or less. That is because Germany charges packaging as a laminate if the layers are more than 5% of the weight.

Transport Packaging

The biggest transport packaging case history we have seen in the U. S. was John Deere tractor company. They invested \$20 million to switch to reusable crates on supplies coming in and most product going out, and created their own reverse logistics system. The payback was just two years¹⁰⁾.

Most U. S. plants have moved to reusable crates inside the plant, though Johnson and Johnson has been able to use reusable crates moving parts between its plants internationally.

More recently, Wrigley's saved about \$1 million per year by switching from a white heavy carton for its gum to a natural kraft, lighter weight box.¹¹ HP is eliminating case lots all together for shipping in product to the U. S. Products are just stretch wrapped on a pallet. The company gets major savings by putting the sales packaging on in the U. S.

One barrier to further reductions in the U. S. is the policies of the American retailers. Each retailer seems to have its own requirements, so manufacturers must make different case lots. The warehouse stores want your case lot to turn into a display! For example, we observed case lots of locks - two going into a corrugated box ! A Wal-Mart requirement, to reduce labor. Why shrink wrap could not be used puzzled me.

Another unique barrier to takeback is that one company has patented a transport packaging takeback system using third party refurbishers in the U. S. Thus, if you want to use this system you must use of the licensees. Since there are no packaging mandates, big companies have not moved to invalidate this patent.

Intranet Use

Companies in the U. S. are increasingly turning to sophisticated software tools to re-think logistics, design packaging on the web, share bid specs and other data between plants. We see that Boots, the UK's largest drug store chain, is using its intranet to ensure its packaging managers throughout the world understand various country requirements. (See Boots slides in Appendix)¹²⁾

Centralizing Packaging Data

Another trend for a few savvy Fortune 500 companies is to centralize their packaging data to ensure the best compliance with all packaging laws worldwide. It takes a while to gather all of this data if you have thousands of SKUs. However, long-term this concept gives you greater control, not only over your packaging fees but packaging costs. H. J. Heinz UK saves about \$150,000 per year in labor by using the Pack.NET software from Foresite Systems Ltd. The company plans on expanding its use to its other European divisions. A major photo products maker in the U. S. has centralized its packaging data, replacing several unwieldy databases, using Pack. NET. They saved about \$100,000 in one month, as they were overpaying their fees in Europe.

Once your data is under control, you can do powerful "if-then" calculations to determine if a particular packaging change will save you on fees. But it will also give you ideas on how to reduce packaging costs on a global basis. As with most new software, Pack. NET is also web-based, to be used by managers worldwide with a browser.

We note that the retailers are taking a closer look at their packaging in the UK because of a convoluted and complex packaging waste law that requires retailers to pay fees. While gathering the packaging data and calculating was initially a major cost, the retailers are now finding that knowing the weights of their packaging - and others - will enable them to save big money.

For example, the UK's largest retailer, Tesco is using the Foresite database of 1.5 million packages to compare the weights of its on-brand packaging with all competitors weights. It

found that, for example, all tuna cans, wine bottles, bread wraps, soda bottles and many others are not equal. This data will enable Tesco to embark upon a major source-reduction program, which the company says will save it about \$30 million per year in materials! If this is true, Tesco will have the largest source reduction program in the Western hemisphere.

Comparing Approaches

It is very difficult to tell if Americans or Japanese companies are doing more to source reduce their packaging. Japanese electronics companies (the only sector we studied) are very transparent in their environmental reports, so we know exactly what they are doing and what they are saving. Sharing this information helps other companies. American companies tend to put less data and more public relations in their environmental reports.

It does appear from the reports that Japanese companies are having an easier time using recycled materials when they set their mind to it. Since the U. S. is spread out geographically, and has no central EPR law driving the issue, companies that want to use recycled content have a difficult time getting quality and quantity they want, at a decent price.

O u t l o o k

As of this writing, the European Parliament has approved more stringent recycling goals 55% by only 2008, and it has strengthened the heavy metals ban in packaging. In addition, it put back in a proposal for the EC to study a "Packaging Environmental Indicator" This would require companies to do lifecycle analysis - in addition to the "Essential Requirements."

The current trend is to require more "due diligence" on your packaging - you have check your entire supply chain to prove there are no toxics, and to ensure it is recyclable or burnable, etc. We expect the packaging fee systems to expand to more countries with EU expansion, and for existing fees to increase with amendments to the packaging directive.

The EU has done little to provide an incentive for use of recycled content, and to make compliance easier for smaller companies. (For example, there could be a pan-European clearinghouse for fees.)

About 99% of U. S. State government recycling managers we surveyed favor an EPR approach. It does look like we will have EPR for electronics, (in addition to the existing system for rechargeable batteries) in the U. S., but no one knows if the electronics system will be piecemeal or national.

If Ontario Canada is successful in continuing its "reimbursement" approach, this could set a very

dangerous precedent for other parts of North America. Remember, local governments in the U. S. are currently strapped for cash. There is no telling if some sort of EPR for packaging will start to look better to the U. S. states in the near future.

The American companies have been taken by surprise with the Canadian developments. I strongly recommend you follow these regulatory trends globally, as you can see they will impact your designs.

Long term, it will make sense to look for ways in which to utilize your plastic packaging and electronics, and even leaded glass scrap in new replacements for lumber in construction, marine and decking applications. Both the U. S. and Europe have moved against use of pentachlorophenol and copper chromium arsenate for treating lumber. We need to find new ways to make these wood replacements cost-effectively. Perhaps with its shortage of natural wood, and culture of cooperation, Japan would be in a position to become a world leader in wood replacements - from old packaging !

APPENDIX

Ontario Vs. a European Producer Responsibility System for Packaging

	Ontario Proposed	Europe
GOALS	Mostly financial - raise \$30 million (CDN) - to \$60 million by 2005 to subsidize 50% of curbside "Blue Box" program costs	Recycling Goals - Required under PKG directive eg: 25% recycling of all PKG; no less than 15% each material; To increase under amendments. Countries vary a bit in specific requirements of collection orgs
Jurisdiction	Provincial level law Quebec has authorization as well and is expected to copy system; Education will be Provincial level	All EPR laws in Europe. Asia are national (exception Belgium, but there are agreements to make collection org. national Education done nationally
Who Manages What	Local government handles all collection, separation, marketing; each may collect different items; too many MRF's. Industry org (Stewardship Ontario) to collect money; do public education; divvy money to local govts; do market development	Germany, Austria - industry handles ALL; other countries shared. Govt. collects, separates. Industry consortium(s) then takes over; contracts with haulers or sub-orgs to ensure recovery; handles public education. Little market development except DSD in Germany. Government not involved in market development.
Fees	(\$2 mill CDN sales exemption) Fees must reach financial goal; de-minimus means if not enough is raised one year to meet fin. Goal, fees go up among larger payers to make up difference! Fees based on complex formula must reflect "cost of service" so if your material is not recycled in many cities, your fees are lower. Thus plastics fees are relatively lower" than they would be in a European system. Paper industry feels this is wrong. The more that's recycled, the more you pay!	No financial goals - industry programs expand as they are able to get to many players to collect Fees are set by collection org- based on cost to collect per kg. Plastics fees are 5-10 times higher than paper. If new collection org; does not get enough members first few years, existing members are not necessarily penalized with very high fees
Subsidies	This is a subsidy. Industry does not actually run any recycling and has little control over what is recycled by cities !	Many collection orgs. Provide top-up fees to local governments to help offset recycling collection costs. They vary! Many are designed to even out markets for recyclers.
Administrative Details	SO must deal politically with what all the municipalities think are their "costs.	Collection Org. sets what its payments will be; completes various contracts with cities.
Curbside mandates	All cities over 5,000 MUST do curbside whether its efficient or not!! So industry must subsidize sometimes inefficient collection system	Curbside NOT as common in Europe, no city is mandated to do curbside
Phase In New Systems	No real phase in time	Usually given 12-24 months
Enforcement	SO has a few months to find 5,000 manufacturers = ! Ministry allocated some of funds for enforcement.	Collection orgs stuck doing most of their own enforcement; Governments of UK, France, Czech Republic, Austria; some Nordic countries trying to enforce
Materials Used	Cities want to keep \$11 million (CDN) income from aluminum!! Not much alum, income in Quebec because of bottle deposit.	Very little aluminum used - steel low value so this is not an issue. Governments apparently don't WANT to market materials !

Incentives for cities; manufacturers	SO will pay city 50% what it feels is "average" cost. No incentive for packagers to improve recyclability of their package !! More its recycled, the higher the fee!! No incentive to use recycled packaging material.	If the overall cost to recycle your material per kg is reduced, the collection org will reduce the fee for that material. Less recycled materials carry much higher fees, France gives a discount for use of recycled content! Otherwise, no real incentive to use recycled material.
Paper EPR	Mandate includes paper fliers, mailings, manuals, inserts, etc. companies must also weigh and pay fees on inserts. This adds another layer of complexity.	No other country or local government attempts to require fees on paper inserts. There are voluntary agreements on use of recycled newsprint in a few countries; inclusion of printed paper in many collections systems, but no EPR fees we know of.

REFERENCES :

Most material from Recycling Laws International, State Recycling Laws Update, personal communications with the author. See <http://www.raymond.com>

Packaging fee calculations noted are from Environmental Packaging International

Fee software case histories are based on interviews with Foresite System Ltd. UK customers, for research for an article to be published in Packaging World Magazine.

See <http://www.foresite.org>

- 1) SB 235, 1991 required that unless industry met a 25% overall recycling rate for RPCs in the state, then all RPCs had to meet one of three standards: contain 25% postconsumer recycled content; source-reduce 10% over 1990 levels or be reusable - in the home is OK. Law amended to exclude food, beverage, cosmetics from standards but not from counting the recycling rate.
- 2) Imports of plastics and electronics continue to get through to Chinese plants, however. Hong Kong is currently trying to crack down but...
- 3) Unfortunately, no U. S. study has ever looked at Canadian deposit systems. Americans frequently ignore Canadian activities.
- 4) See Proceedings, Take It Back ! 2003, from Raymond Communications; available at <http://www.raymond.com>
- 5) ASSURE statements
- 6) Note that the Czech Republic requires retailers to keep records for ER compliance - very unusual - so manufacturers are now being asked for proof of compliance at import. This has caused many more U. S. firms to start looking at whether they are complying with recycling laws.

- 7) Communication with David Perchard, who serves on CEN committee
- 8) US EPA figures; European figures from EC reports
- 9) Ecoemballages allows a discount on its collection fees when you use recycled material in the packaging. It also charges more if you introduce a new package for which there is no collection system in place.
- 10) Transportation Packaging and the Environment 1997, from Raymond Communications I n c .
- 11) Presentation from Wrigley's at Take It Back ! 2002, Las Vegas Nevada March 2002
- 12) Presentation from Andrew Jenkins, Boots PLC, UK, at Take It back! 2003, Raymond Communications See examples in Appendix.