

# Contractor's Report to the Board



California Integrated Waste  
Management Board



JUNE 29, 2007

Contractor's Report  
To The Board

*Framework for Evaluating End-of-Life Product  
Management Systems in California*

Produced Under Contract by:

**R3** Consulting Group, Inc.  
Resources Responsibility Respect

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Publication #XXX-XX-XXX [Editorial staff will provide this]



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*Prepared as part of contract number IWM -05093. Total contract amount: \$59,815.*

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# Acknowledgments

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The information in this report was provided by R3 Consulting Group, Inc. (contractor) and the Product Stewardship Institute (subcontractor). There were several individuals that provided information as background for the Report and we would like to thank them: Monica Roll and Hans Korfmacher, Gillette; Kieren Mayers, Sony Europe.

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# Executive Summary

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California, through legislation and regulation, has historically taken a product by product approach to banning products from disposal and in developing funding and collection systems. In February 2000, the Department of Toxic Substances Control (DTSC) approved emergency regulations that established a State Universal Waste Rule for household batteries, fluorescent lamps, and mercury thermostats. The Universal Waste (U-Waste) Rule allows common low-hazard wastes to be managed under less stringent requirements than hazardous wastes.

However, in order to allow time for the collection and recycling infrastructure and recycling capacity for U-Waste products to develop without placing an undue burden on the public hazardous waste management system or other stakeholders, in 2002 the Department of Toxic Substances Control (DTSC) “exempted” households and many small businesses from the landfill disposal ban until February 2006. During that period, a limited recycling infrastructure (i.e., for processing collected products) emerged, but few convenient collection mechanisms were put in place to ensure the proper End-Of-Life (EOL) management of U-Waste. As a result, many jurisdictions report an increase in volumes collected which has increased the costs for local jurisdictions and the general taxpayer. The rationale behind DTSC allowing the sunset of these disposal exemptions consisted of two key reasons: 1) to protect public health and the environment by stimulating proper EOL management infrastructure; 2) extending the disposal exemptions would not address the issue of lack of funding for collection infrastructure development.

Sentiment in California for a fundamental shift in the financial burden of dealing with EOL product management from municipalities to producers and consumers of those products is gaining momentum which is often referred to as Extended Producer Responsibility (EPR), Producer Responsibility or Product Stewardship. Over the last decade, a variety of EOL product management systems (Systems) have been implemented around the world. In order to take advantage of those experiences and not “reinvent the wheel”, the California Integrated Waste Management Board (CIWMB) engaged a contractor to review individual case studies of Systems that could be applied to hazardous products. This report presents a framework that could be used to compare EOL systems for analysis which can then be used to develop policies or legislation in California to more effectively manage certain waste streams, but in particular, U-Waste, latex and oil-based paint.

The Report is structured to provide:

- A model EOL product management system framework for this set of product types;
- Eight case-studies presented using the framework;
- Lessons learned from the case studies that were used to help develop the recommendations for this report; and
- Next steps that the CIWMB could consider to determine an EOL product management system for each of the identified products.

### ***Framework for Analyzing System Elements***

The framework or model consists of eight elements (Elements) to both facilitate the presentation of the case study information and provide a consistent “language” for discussion and the development of policies or legislation. Each element relates to different factors--from the source of funding to the flow of the money and finally the implementation of the program, all of which are part of an EOL “System”.

Producer Responsibility Organizations or PRO’s are referred to throughout the report and for the purposes of this report defined as organizations that have been established either voluntarily or legislatively to administer recovery and recycling Systems for any given product. Membership is entirely comprised of industry representatives, including manufacturers, distributors and retailers.

The System elements are as follows:

<b><u>Element</u></b>	<b><u>Options</u></b>
<b>Funding Mechanism:</b>	<i>Fee (invisible or visible) or Tax</i>
<b>Funding Approach:</b>	<i>Mandatory or Voluntary</i>
<b>Fee Collection Point:</b>	<i>Point of Manufacture, Sale or Disposal</i>
<b>Fund Consolidation Point:</b>	<i>Producer Responsibility Organization (PRO), State Government, Producer or None</i>
<b>Fund Oversight:</b>	<i>Government, PRO, Producer, None</i>
<b>Fund Management:</b>	<i>Government, PRO, Producer, None</i>
<b>Program Oversight:</b>	<i>PRO or State Government</i>
<b>Program Operations:</b>	<i>PRO, Private Companies, Local Government or Other Publicly-Funded Entities, or Combination</i>

Each of these Elements represents decision points for the CIWMB to consider in developing Systems for California and each raises a set of considerations.

### ***Limitations of this Study***

Forty different Systems were reviewed prior to selecting eight to be developed into case-studies. The eight Systems represent a broad range of Systems types, however, the findings are based on the eight case studies developed for this Report and the research conducted by the Contractor.

The case studies are limited to the availability of System data as provided by the organizational representatives. The case studies highlight the disparity in quality and quantity of available data among the Systems. This can be most easily seen in how the programs identify performance goals, baseline data, and subsequent program effectiveness. For example, the programs that did not set clear performance goals, collect baseline data, or did not compare recovery rates to sales data were difficult to analyze for effectiveness.

In addition, while the simplicity and success of some of the Systems seem compelling, it is important to take into account issues related to scale when applying the lessons learned from other programs to California. The size, population, and diversity of California must be taken into account when comparing and/or ultimately implementing any System. For example, the population of all of British Columbia is 4.3 million as compared to the State of California at 36 million.

### ***Recommended System Elements***

Because one solution does not fit all products, this frame work is recommended as the starting point for future discussions in designing EOL Systems. The recommended System elements are as follows:

<b><u>Element</u></b>	<b><u>Recommendation</u></b>
<b>1. Funding Mechanism:</b>	<i>Fee – invisible</i>
<b>2. Funding Approach:</b>	<i>Mandatory</i>
<b>3. Fee Collection Point:</b>	<i>Point of Manufacture</i>
<b>4. Fund Consolidation Point:</b>	<i>PRO or individual producer</i>
<b>5. Fund Oversight:</b>	<i>Government</i>
<b>6. Fund Management:</b>	<i>PRO or individual producer</i>
<b>7. Program Oversight:</b>	<i>Government</i>
<b>8. Program Operations:</b>	<i>The parties most appropriate for that product type may include consumers, retailers, producers, local government, haulers and transporters, recyclers, and other product processors</i>

The recommended Elements intend to align with the CIWMB's core values and have a built-in flexibility for elements 4, 6, and 8. However, there needs to be thorough stakeholder input and consideration before utilizing this framework for products with existing funding and management systems in-place as changing existing systems might have unintended consequences.

Table 1 on page 8 summarizes some benefits and challenges of the options presented in the framework, and reference the case studies in which they were observed. Factors that need to be considered when designing a System are also identified. It is important to note that when talking with stakeholder representatives, they may consider the same Element to have different benefits and challenges depending on their perspective. Therefore, the benefits and challenges listed are general and some parties may take issue with how they are presented, but it is provided to CIWMB for discussion purposes.

### ***Considerations for Legislatively-Mandated Systems***

California is currently using a product-by-product approach to EOL product management as demonstrated by the bills introduced in the 2007 legislative session. California could consider developing a regulatory framework supporting EPR that provides guidance to

Cal/EPA and all the stakeholders when products are proposed to be banned from disposal. The predictability created by such a framework facilitates planning and innovation as is demonstrated in British Columbia.

What has emerged through the analysis of case studies, interviews with key individuals, and stakeholder input is that the approach taken by government, combination of Elements selected, and clear roles and responsibilities identified for program participants, particularly government and the private sector, influences System design. Thoughtful System design and effective program implementation ultimately determine program success relative to ensuring high collection rates, program longevity, and stability. System design reflects the values of the stakeholder group making those decisions, so depending on particular goals and motivations, the design of an ideal System would vary. However, a collaborative process enables the stakeholders to come together and articulate their point of view leading to the development of a System that all can “live with”.

### ***Role of State Government***

The role of state government is particularly important for those Elements where transparency and protecting the public’s interest is at stake: Fund Oversight, and Program Oversight. However, even among Systems that utilize state government for the same purpose, such as Fund Oversight, how that function is executed varies.

For example, British Columbia Ministry of the Environment requires paint producers, either individually or through a PRO, to submit an annual report and audited financial statements (if using a visible fee which is an option for producers) to the government for review, while the State of California performs its electronic program fund oversight through a separate government agency that manages the fund and oversees the program and its operations. Traditionally in California, programs financed with advance recycling fees have burdened state government with the role of consolidating and managing funds, which may not be the most cost-effective solution.

### ***Planning for Program Evolution***

Legislatively-mandated programs generally set system design parameters “in stone” which limits program responsiveness and flexibility over time. As can be seen in almost all of the case studies, programs frequently change, and flexibility should be built into any System to accommodate program evolution and a variety of service delivery models. As a collection infrastructure matures and collected product volumes increase, the efficiency of a System should also increase. In a flexible system, the fee amounts change as the collection System costs, products managed, or markets change. A System with this flexibility can more easily adapt and respond to events such as changing market forces, innovations in technology, and changes in product toxicity without requiring a cumbersome process of developing or amending legislation or beginning new stakeholder processes to accomplish the necessary EOL product management System.

For example, the Ministry of the Environment in British Columbia plays a role in Program Oversight and a limited role in Fund Oversight, thereby creating a System where the paint PRO was able to develop a flexible financing structure which allowed them to reduce fees by 14 percent on paint products in 2005. This was due to new efficiencies in the System, even during a year when volumes collected increased. In contrast, a fee reduction for the E-Waste program in California is a much more structured process.

### ***Market Forces***

The influence of market forces among product types can significantly impact the level of funding required. Products with value, such as lead-acid batteries, will often be managed by the market, and government involvement may be reduced accordingly. A strong market demand for salvaged/recycled products (i.e., printer toner cartridges or precious metals) will require less government involvement to encourage diversion from the waste stream as opposed to a product that has little, no, or even negative market value as is the case currently with used household alkaline batteries. Competition in product processing infrastructure can also help to drive down processing costs and ultimately program costs.

For example, Switzerland instituted battery recycling with only one recycling facility, whereas France has several facilities. According to Hans Korfmacher Director Environmental External Relations for Gillette (which owns Duracell battery), what costs \$5,000 for processing in Switzerland cost \$500 in France simply due to having market competition among processors.

### ***Building Program Operations around Mutually Beneficial Partnerships***

Understanding the needs and potential benefits of partnerships can lead to creative solutions when designing a System, and there are many examples that illustrate this point.

For example, in British Columbia, the paint PRO, Product Care, partners with retailers on public education efforts, and local governments and other sites to reimburse them for collecting paint from the public. Another example from the case studies is the Agricultural Pesticide Container Program where local governments work with the Agricultural Container Recycling Corporation (ACRC) to promote the recycling events and increase collection. A California specific example is the Take-it Back Partnership which is currently working with Pacific Gas & Electric (PG&E) to specifically test how the utility can partner with local government to increase education and collection rates of fluorescent lamps. The Good Guys electronics store, Goodwill Industries, Hewlett Packard and other groups which partnered with state and local governments in Washington to test take-back methods and together, developed a partnership that helped pass the first full producer responsibility legislation in the country for E-Waste. Additionally, water quality agencies may partner with solid/hazardous waste entities for the collection and management of mercury thermometers from the public. In partnership, the producers and agencies can leverage costs associated with outreach and collection activities. In some cases the parties also benefit from the experience that their partners may have to most efficiently utilize existing infrastructure and established management processes especially for cross-media issues.

### ***Next Steps***

In recommending an EOL Product Management System Framework, the contractor recognizes that legislative change is needed to give CIWMB and the appropriate Cal/EPA agencies and Departments the authority to implement the recommendations. With that understanding, the contractor recommends CIWMB consideration of a two-phase process where Phase I efforts can begin immediately by working on a voluntarily basis with producers and other stakeholders. Phase II would require legislative efforts, specific policy direction, or would be on-going.

Per the CIWMB strategic directives, a producer managed and producer-financed System is desired. With that policy direction and the general findings from the case studies, the Contractor recommends the CIWMB consider the following efforts for Phase I implementation:

#### PHASE I

1. CIWMB can immediately request that producers voluntarily begin to design the Program Operations to collect and manage their product following the hierarchy of reuse, recycling, environmentally sound management with the goal of cradle-to-cradle producer responsibility.
2. CIWMB can offer support to producers in convening stakeholders to assist in the design of Program Operations.
3. CIWMB can determine, with the input of the producers and other stakeholders, a time-frame and milestones to achieve 100 percent collection/reuse rate, or as close to it as is possible due to the existing disposal ban.
4. CIWMB can determine, with the input of producers and other stakeholders, how to establish base-lines and calculate the collection rate and collect data for each product, to measure program effectiveness.

#### PHASE 2

In addition to the four primary considerations which can be implemented immediately to support producer financed and managed Systems, the contractor recommends that CIWMB consider the following for Phase II although not necessarily in this order, which could begin either concurrently with Phase I or as CIWMB staff time allows:

1. Draft legislation for a flexible regulatory framework to which products can be designated by regulation and does not require a change in law. British Columbia, Canada and several other Canadian provinces, have developed a regulatory framework that is flexible and allows the Provincial Government by regulation to add products to the regulated list without changing the law.
2. Adopt policies that provide the direction to staff clarifying the desired role of government, producers, and retailers for Systems.
3. Clearly communicate the roles of CIWMB and DTSC (which may require further legislative direction) in managing the products at EOL, including enforcement with existing laws such as the mandatory take-back laws for rechargeable batteries and cell-phones.
4. Expansion of State Green Procurement policies to include product stewardship components to drive market-based solutions for products (as appropriate) and encourage green design. Government procurement for recycled products can help “drive” markets for many targeted products like paint. However, this concept does not apply to all products, such as mercury containing products.
5. CIWMB could support California participation as national and international solutions are discussed to manage U-Waste, E-Waste, and other hazardous

products or “substances of high concern” such as carcinogens, endocrine disruptors, mutagens, etc.

6. Consider conditioning the sale of a hazardous product on demonstration of a producer participation in an effective collection system as exemplified in the British Columbia Paint and the Maine E-Waste and Thermostat case-studies.
7. Consider banning the sale of a product when the products are being banned from landfill disposal, particularly when effective, non-hazardous substitutes exist such as was done with mercury thermometers.
8. Consider adoption of enforcement policies in conjunction with adoption and implementation of the System.
9. Hosting workshops at Cal/EPA and invite government, producers, and PRO representatives from around the world who have experience with different collection and financing systems to discuss what is or is not working to help design the best program in the world here in California. California could learn from the experiences of other entities within existing Systems highlighted in this Report and more.
10. Continue to build CIWMB library on EOL product management and financing systems and ensure staff have access to national and international conferences and studies on these topics and can gain expertise in the area of what has or has not worked around the world.

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**Table 1. System Element Considerations: Benefits and Challenges**

Element of System (# Case Studies)	Considerations	Benefits	Challenges
<b>Funding Mechanism</b>			<ul style="list-style-type: none"> <li>▪ Difficult to determine EOL management costs.</li> </ul>
Option A – Fee	<ul style="list-style-type: none"> <li>▪ Can be voluntary or mandatory.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Costs for EOL borne by those who use products, not public at large.</li> </ul>	<ul style="list-style-type: none"> <li>▪ If mandatory, it requires legislation to assess fee.</li> </ul>
<ul style="list-style-type: none"> <li>• Visible Fee (2)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Stability of funding largely dependent on whether voluntary or mandatory system. Mandatory systems in case studies often provided more stable funding mechanism.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Potential for consumers to recognize cost of EOL management, although case studies did not bear this out.</li> </ul>	<ul style="list-style-type: none"> <li>▪ May increase work for retailers (i.e. itemizing cost on receipt, educating staff to explain, etc.</li> </ul>
<ul style="list-style-type: none"> <li>• Invisible Fee (6)</li> </ul>	<ul style="list-style-type: none"> <li>• “Fees” are in essence an internal cost of doing business if it is the individual producer, and are truly a “fee” on the producer paid to a PRO.</li> </ul>	<ul style="list-style-type: none"> <li>▪ EOL costs are internalized into product price.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Consumers do not recognize cost of EOL management</li> </ul>
Option B – Tax (0)	<ul style="list-style-type: none"> <li>▪ Instituting or increasing taxes politically difficult; none of case studies chose this option.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provides reliable funding source.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Revenue generated by taxes often not required to be used for purpose for which collected.</li> <li>▪ Taxes do not promote producer responsibility.</li> </ul>
<b>Funding Approach</b>			
Option A – Voluntary (3)	<ul style="list-style-type: none"> <li>▪ May be easier to implement for product types with limited number of producers, as participants easier to identify.</li> <li>▪ Voluntary systems tend to develop when there is market demand or “monetary value” placed on product components.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Producers generally support voluntary Systems.</li> </ul>	<ul style="list-style-type: none"> <li>▪ By not requiring a producer to pay for EOL services (“level playing field”) or enabling some to drop out at any time, program may become under-funded, as exemplified in the ACRC case study.</li> </ul>

Element of System (# Case Studies)	Considerations	Benefits	Challenges
Option B – Mandatory (5)	<ul style="list-style-type: none"> <li>▪ Mandatory funding requirements could be specific such as in the e-waste bill, or general such as is done in British Columbia.</li> <li>▪ Requiring mandatory participation to fund EOL management is different than mandated program design</li> </ul>	<ul style="list-style-type: none"> <li>▪ Creates level playing field for all by equitably distributing EOL costs across all producers; particularly for products and/or component products with weak or no market demand.</li> <li>▪ Provides reliable funding source.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mandatory participation is generally opposed by producers in the United States.</li> </ul>
<b>Fee/Tax Collection Point</b>			
Point of Manufacture Point of Manufacture (POM) (6)	<ul style="list-style-type: none"> <li>▪ Places requirements on retailers if utilized with a visible fee; no requirements on retailers with an invisible fee.</li> <li>▪ POM is defined for this Report as being collected at the first person or entity in California to take title to the product – the same definition as in the Used Oil Program.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Supports producer responsibility.</li> <li>▪ Program funds are generated per unit produced, not when captured at EOL.</li> <li>▪ May be more efficient; involves the least number of stakeholders.</li> <li>▪ Cost internalization may encourage cost-competitiveness and green design.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Producers generally oppose fees at POM.</li> <li>▪ Some producers claim they cannot internalize costs due to market realities</li> </ul>
Point of Sale (POS) (2)	<ul style="list-style-type: none"> <li>• Fees collected at POS are used in two case studies, CA E-Waste and the Lead Acid Battery program.</li> <li>• British Columbia collects fees at POM but allows manufacturers to pass-through costs to retailers at POS and many do so it is more flexible than a true POM fee.</li> </ul>	<ul style="list-style-type: none"> <li>• Customers see cost to manage product at EOL.</li> <li>• Lead acid battery program uses POS fees and has the highest collection rate of all the case-studies at 99%</li> </ul>	<ul style="list-style-type: none"> <li>▪ Places burden on retailers to collect fees and remit them to State or other entity.</li> <li>▪ Does not provide direct feedback to producers which may encourage green design.</li> <li>▪ Could result in multiple fees on customer receipts.</li> </ul>
Point of Discard (POD) (0)			<ul style="list-style-type: none"> <li>▪ Fees collected at the POD may be a disincentive to return and encourage illegal dumping/disposal.</li> <li>▪ Program funding limited to fees collected from products actually returned.</li> <li>▪ Does not provide direct feedback to producers to encourage green design.</li> </ul>
<b>Fund Consolidation Point</b>			

Element of System (# Case Studies)	Considerations	Benefits	Challenges
Producer Responsibility Organization (PRO) or Individual Producer (5)	<ul style="list-style-type: none"> <li>▪ Five case studies utilize producers either directly or via a PRO.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Supports producer responsibility.</li> <li>▪ When PRO also manages fund oversight, management, and program operations, it can track the sufficiency of funds to provide collection and recycling services and avoid taxpayer expense.</li> <li>▪ Reduced government oversight and cost when producers consolidate the funds.</li> </ul>	
State Government (2)	<ul style="list-style-type: none"> <li>▪ Two of the eight case studies utilize state government for Fund Consolidation.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Financial accountability and transparency.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Increase government size and associated costs to administer that function.</li> </ul>
None (1)	<ul style="list-style-type: none"> <li>▪ One of the case studies has no Fund Consolidation Point; each retailer in charge of own program.</li> <li>▪ May lend itself to product types whose components have a high market demand.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Each retailer has flexibility of being in charge of own program.</li> </ul>	
<b>Fund Oversight</b>	<ul style="list-style-type: none"> <li>▪ Direct Fund Oversight by same entity handling majority of the program may improve fund administration and reduce overhead costs.</li> <li>▪ Care should be taken to address this during program design (i.e. require entity to post audited financial statements in format to determine cost effectiveness).</li> </ul>		<ul style="list-style-type: none"> <li>▪ Producers and government experienced similar challenges in Fund Oversight; same entity collecting the money and overseeing the fund can result in lack of transparency to those outside the organization.</li> </ul>
Producer Responsibility Organization (PRO) or Individual Producer (4)		<ul style="list-style-type: none"> <li>▪ Supports producer responsibility.</li> <li>▪ Participating producers are fully responsible to manage their own funds.</li> <li>▪ Private sector has opportunity to self-manage and develop most efficient method.</li> </ul>	
State Government (3)		<ul style="list-style-type: none"> <li>▪ Offers enforceability of proper transactions and requirements.</li> <li>▪ Traditional role of government.</li> <li>▪ Increases transparency and reduces potential for fraud.</li> </ul>	

Element of System (# Case Studies)	Considerations	Benefits	Challenges
None (1)	<ul style="list-style-type: none"> <li>▪ One of the case studies (auto batteries) has no Fund Oversight; each retailer in charge of own program.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Each retailer in charge of own program.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Potential for fraud.</li> </ul>
<b>Fund Management</b>	<ul style="list-style-type: none"> <li>▪ Direct Fund Management by same entity handling majority of the program may improve fund administration and reduce overhead costs; may also result in lack of transparency to those outside the organization.</li> <li>▪ Transparency should be address during program design by requiring entity to post audited financial statements in a format that allows for adequate determination of cost effectiveness.</li> <li>▪ Producers and government have demonstrated success in Fund Management.</li> </ul>		
Producer Responsibility Organization (PRO) or Individual Producer (5)	<ul style="list-style-type: none"> <li>▪ Five of the eight case studies identify either a PRO or individual producer as responsible for Fund Management.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Supports producer responsibility.</li> <li>▪ Private sector has opportunity to manage itself to develop most efficient method.</li> </ul>	
State Government (2)			<ul style="list-style-type: none"> <li>▪ There is a risk of “sweeping” funds for other government programs, particularly in times of tight budgets.</li> <li>▪ Increases state involvement and overhead.</li> </ul>
None (1)	<ul style="list-style-type: none"> <li>▪ One of the eight case studies has each retailer in charge of own program.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Each retailer in charge of own program.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Potential for fraud.</li> </ul>

Element of System (# Case Studies)	Considerations	Benefits	Challenges
<b>Program Oversight</b>	<ul style="list-style-type: none"> <li>▪ All systems demonstrated similar levels of success; question of which entity should perform this Element is largely a policy decision to determine appropriate roles of the public and private sectors.</li> <li>▪ Program success must be verifiable and transparent via reporting requirements.</li> </ul>		<ul style="list-style-type: none"> <li>▪ Without quantification of program goals, successful program oversight is difficult to discern.</li> </ul>
Producer Responsibility Organization (PRO) or Individual Producer(2)		<ul style="list-style-type: none"> <li>▪ PRO can more efficiently track the program effectiveness (i.e. recycling rate) since it has greater access to sales data.</li> </ul>	
State Government (6)	<ul style="list-style-type: none"> <li>▪ One of the six utilizes a combination of State government and PRO.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Of the six case studies utilizing state government for Program Oversight, key to success seems to be ability of government to establish and ensure program goals are met and system participants design the program to meet the goals.</li> </ul>	
None (1)		<ul style="list-style-type: none"> <li>▪ No cost.</li> </ul>	<ul style="list-style-type: none"> <li>▪ May be lack of understanding of program if no entity is tracking the operations of the overall system.</li> </ul>
<b>Program Operations</b>	<ul style="list-style-type: none"> <li>▪ Entities involved will vary by product type/waste stream.</li> <li>▪ Should have broad set of stakeholders at design phase to increase likelihood of program success.</li> <li>▪ Utilization of existing infrastructure and partnerships facilitates efficient Program Operations, particularly during program start-up phase.</li> <li>▪ Convenient locations for collection increase likelihood that consumers will recycle.</li> <li>▪ Legislatively-mandated programs must be broad enough to allow multiple service deli models to optimize responsiveness to changing market and other conditions.</li> </ul>	<ul style="list-style-type: none"> <li>▪ State u-waste management standards increase likelihood that collected devices are properly recycled rather than disposed.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Difficult to track products being shipped out of state and/or out of country.</li> </ul>

Element of System (# Case Studies)	Considerations	Benefits	Challenges
Local Government (or other publicly-funded entities) (0)	<ul style="list-style-type: none"> <li>▪ Credibility of government-managed and operated programs varies by community.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Existing network of public facilities can be utilized</li> </ul>	<ul style="list-style-type: none"> <li>• Does not support producer responsibility</li> </ul>
PRO or Individual Producers (0)		<ul style="list-style-type: none"> <li>▪ Supports producer responsibility.</li> </ul>	
Private Company (recyclers, distributors, etc.) (0)	<ul style="list-style-type: none"> <li>▪ Having multiple companies, facilitates competition and ensures coverage in remote and/or rural areas.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Creates business opportunities, particularly in remote and/or rural areas with no existing recyclers/processors.</li> <li>▪ Providing recycling draws customers to stores and can result in additional purchases by recyclers.</li> </ul>	<ul style="list-style-type: none"> <li>▪ The long-term viability of small and/or specialty businesses built around any EOL program that may change.</li> </ul>
Combination (8)	<ul style="list-style-type: none"> <li>▪ Diverse set of players increases overall program stability and its responsiveness to change.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Creates business opportunities and jobs in the state.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Multiple program operators can make oversight difficult.</li> </ul>

# Introduction

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California, through legislation and regulation, has historically taken a product by product approach to banning products from disposal and in developing funding and collection systems. In February 2000, the Department of Toxic Substances Control (DTSC) approved emergency regulations that established a State Universal Waste (U-Waste) Rule for household batteries, fluorescent lamps, and mercury thermostats. The Universal Waste Rule allows common low-hazard wastes to be managed under less stringent requirements than hazardous wastes.

However, in order to allow time for the collection and recycling infrastructure and recycling capacity for U-Waste products to develop without placing an undue burden on the public hazardous waste management system, in 2002 the DTSC “exempted” households and many small businesses from the landfill disposal ban until February 2006. During that period, a limited recycling infrastructure (i.e., for processing collected products) emerged, but few convenient collection mechanisms were put in place to ensure the proper End-Of-Life (EOL) management of U-Waste. As a result, costs of managing these products increased for local jurisdictions and the general taxpayer. The rationale behind DTSC allowing the sunset of these disposal exemptions consisted of two key reasons: 1) to protect public health and the environment by stimulating proper EOL management infrastructure; 2) extending the disposal exemptions would not address the issue of lack of funding for collection infrastructure development.

As a result of the U-Waste landfill ban and ongoing efforts to address EOL paint management options, in June 2006, the California Integrated Waste Management Board (CIWMB) contracted with a waste management consulting firm to prepare this report titled, “Framework for Evaluating EOL Product Management Systems in California” (Report) for U-Waste and paint. The contractor worked closely with Board staff who guided the contractor throughout the Report development.

Existing policies, state and local government efforts, and budget language that may impact the EOL product management discussion surrounding the products of concern include the following:

- Strategic Directives: Language adopted by the CIWMB in February 2007 includes the following:

SD – 3: Minimize Waste – It is a core value of the CIWMB that all products be properly managed in order to minimize the generation of waste (source reduction), maximize the diversion of products from landfills, and manage all products to their highest and best use in accordance with the waste management hierarchy and in support of the California Global Warming Solutions Act of 2006;

SD – 5: Producer Responsibility – It is a core value of the CIWMB that producers assume the responsibility for the safe stewardship of their products in order to promote environmental responsibility; specifically, the CIWMB will:

- Utilize existing Board authority to foster “cradle-to-cradle” producer responsibility.
- Seek statutory authority to foster “cradle-to-cradle” producer responsibility.

- Analyze the feasibility of various approaches to increasing producer responsibility, including during the product design and packaging phases, and make recommendations to the CIWMB Board by December 2007, and annually thereafter.
- Build capacity and knowledge in CIWMB on Extended Producer Responsibility (EPR) issues and solutions.
- Develop and maintain relationships with stakeholders that result in producer-financed and producer-managed systems for product discards.

SD – 6: Market Development – It is a core value of the CIWMB to assist in the development of viable, sustainable markets to divert products from landfills and encourage source reduction and recycling in accordance with the waste management hierarchy and in support of the California Global Warming Solutions Act of 2006;

SD- 8: Enforcement – It is a core value of CIWMB to manage and mitigate the impacts of solid waste on public health and safety and the environment by ensuring compliance with regulations and state minimum standards, through integrated and consistent permitting, inspection, and enforcement efforts.

- California 2006/07 Budget Language on Product Take-Back Efforts – “The Board, in conjunction with the Department of General Services, shall evaluate the feasibility of implementing a producer responsibility or “take-back” program for those goods purchased by the California State Government. This study should focus on those products that are, or could be, most conducive to reuse or recycling by the producer together with products that make up a substantial portion of the State government waste stream. Further, it should assess the effectiveness of current take back provisions in state contracts. This evaluation shall result in a report to the legislature by January 1, 2008 and shall include an overview of similar activities that are occurring across the country or around the world that may serve as a model for California in the future.”
- Take it Back Partnership (TIBP) – A collaboration of state government, including DTSC and CIWMB; city and county government; businesses; non-profit agencies and non-governmental organizations to provide free, local, and convenient ways for California residents to recycle household wastes such as batteries, fluorescent lamps and electronic devices that can no longer be disposed in the trash;
- California Product Stewardship Council (CPSC) – A group of California local governments with the stated mission to shift California’s product waste management system from one focused on government-funded and ratepayer-financed waste diversion to one that relies on producer responsibility in order to reduce public costs and drive improvements in product design that promote environmental sustainability; and
- Product Stewardship Institute (PSI) – California is one of the founding members of PSI, a national organization working with state and local government agencies to pursue initiatives to ensure that all those involved in the lifecycle of a product share responsibility for reducing its health and environmental impacts. California participates

in PSI facilitated national dialogues, pilot projects, networking conference calls, and other initiatives in a number of product categories, including paint, mercury thermostats, electronics, and fluorescent lamps.

Sentiment in California for a fundamental shift in the financial burden of dealing with EOL product management from municipalities to producers and consumers of those products is gaining momentum which is often referred to as Extended Producer Responsibility (EPR), Producer Responsibility or Product Stewardship. Over the last decade, a variety of EOL product management systems (Systems) have been implemented around the world. In order to take advantage of those experiences and not “reinvent the wheel”, the CIWMB engaged a contractor to review individual case studies of Systems that could be applied to hazardous products. This report synthesizes that information into a framework that could be used to develop policies or legislation in support of EOL product management in California to more effectively manage certain waste streams, but in particular, U-Waste and latex and oil-based paint.

This Report provides a framework for understanding EOL product management systems (Systems) through a review of a diverse set of case studies of systems around the country and the world. Therefore, while the recommendations in the Report reflect the urgency of the situation created by the February 2006 U-Waste landfill ban, it also presents a model with which CIWMB could use to systematically approach future design of EOL systems for hazardous and possibly non-hazardous products.

## ***Background***

### U-Waste

DTSC stated in the October 2005 U-Waste workshop that although the collection capacity and infrastructure increased over the four years of the exemption, the decision to allow the exemption to expire was based on two things:

1. It would stimulate further development of the recycling infrastructure, and
2. Extending the exemptions would not address the need for adequate funding for collection infrastructure development.

The U-Waste exemption from landfill disposal provided four years for stakeholders such as local governments, producers, distributors, and retailers of these products to develop the infrastructure and voluntary industry solutions. Yet few voluntary solutions were offered (rechargeable batteries and thermostats are the exception) and capture rates are still relatively low for those products when compared to volume of product banned from landfill. Existing collection opportunities such as retail drop-offs and household hazardous waste (HHW) facilities are not widely available enough to be considered convenient for households and for that reason and others the collection volumes are less than 1 percent of annual sales of lamps, batteries, and thermostats as reported by the 2002 report by CIWMB titled “Household Universal Waste Generation in California.” The most current data as reported by local governments annually to DTSC, documents the increase in collection rates of 34 percent for fluorescent lamps and 38 percent for batteries (alkaline and rechargeable combined) between FY 04-05 and FY 05/06.

In California, discussions on how to finance and manage U-Waste and paint at the end-of-life have been ongoing and legislation addressing this has been enacted. Electronic waste (E-Waste) was addressed with the passage of SB 20 in 2003 and through follow-up legislation SB 50 passed in 2004. Because of the law, statewide infrastructure for E-Waste has expanded and the volume collected continues to increase steadily.

Statewide discussions on how to manage U-Waste also led to the passage of two laws on cell phone and battery take-back. The Rechargeable Battery Recycling Act (AB 1125) took effect in February 2006 requiring free retailer take-back for small rechargeable batteries that the stores sell. The Cell Phone Recycling Act (AB 2901) took effect in July 2006 and covers wireless telephone devices and the rechargeable batteries in cell-phones. It requires a retailer of cell phones to take-back used cell phones for free for reuse, recycling, or proper disposal. However, for both Acts, there is no enforcement mechanism to date for non-compliant retailers.

In addition to the aforementioned legislation, there have been other attempts to address U-Waste products that failed. For example, two bills have been introduced to address fluorescent tubes, one in 2002 which would have required a \$0.10 per tube advanced disposal fee, and a bill in 2004 which promoted a recycling incentive payment. AB 2271, a bill that would address alkaline batteries by putting a \$0.10 per battery advanced disposal fee on each alkaline battery sold in California, stalled in the Assembly.

The 2007 legislation includes several bills that address U-Waste and also EOL Systems and some are continuing to move through the legislative process while others, such as AB 1193, the Mercury Thermostat Collection Act, would require producers to create a collection and recycling program for out-of-service mercury thermostats, was unsuccessful.

The cost to support the ongoing collection of U-Waste is projected to be approximately \$42 million annually based on the CIWMB Infrastructure Study in 2002 by JD Franz for only 32 of the 58 counties. There is no formal system in place outside of local tipping fees or HHW fees on solid waste bills to fund ongoing programs. The CIWMB-funded HHW grants which total \$5 million annually are used to expand or implement HHW programs and not to pay for ongoing costs. Therefore, local government waste management agencies bear the costs of EOL U-Waste and paint management.

### Paint

In addition to the landfill ban for U-Waste, latex paint may be hazardous in California (based on presumptive hazardous nature or on generator knowledge) as is oil-based paint. Therefore, no liquid paint, latex or oil-based, can be disposed of in California landfills. Leftover paint collection continues to be one of the largest household hazardous waste streams generated comprising 35 percent of all HHW collected by local programs in California, as reported by CIWMB. Like U-Waste, the volume of leftover paint collected continues to increase. In FY 03/04, 1.4 million gallons of leftover paint were collected which increased to 2.1 million gallons in FY 04/05 at an approximate cost of \$8 per gallon to manage. The estimated statewide cost to local government to manage leftover paint in FY 04/05 totaled \$16.8 million. In FY 2004/05, 19 percent of HHW collected was latex paint and 16 percent was oil-based paint. According to CIWMB, the cost to local government to manage paint is 53 percent of the total costs for HHW management (latex is 29 percent and oil-based is 24 percent). Of the total paint sales in

California, only 12 percent of paint sales are oil-based and that number is expected to drop since the South Coast Air Quality Management District imposed limits in 2006 effectively banning solvent-borne coatings to 45 percent of the State's population.

Discussions on how to manage paint have been ongoing at CIWMB Board meetings since the mid-1990s. At the January 2000 meeting, the Board directed staff to convene a Paint Task Force that included industry, state agency staff, environmental organizations and local government participants. The Task Force meetings led to Board agenda items in March 2000 and again in August 2000 to further discuss the challenges of paint collection and management. The CIWMB heard an action item in January 2001 and voted unanimously for the staff recommendation to develop a legislative proposal for a waste paint management program supported by a fee on the sale of new architectural coatings. Further legislative action has not been taken. Then, in December 2003, the Paint Task Force merged with the newly-formed Paint Product Stewardship Initiative (PPSI) and new legislative proposals were put on-hold to allow the PPSI to collaboratively, with many stakeholders participating from government, industry, retailers, and others, develop a financing and management system.

To date, PPSI has implemented several projects and collected new data on why consumers overbuy paint and the estimated cost to develop an infrastructure to manage paint. The latest update from PPSI March 23rd is that another MOU will be developed to implement and evaluate a Regional demonstration project with funding from industry in late 2007, the demonstration project in Minnesota in 2008, and inception of the program in California in 2009 and full national roll-out by 2017. The draft MOU explores a voluntary approach funded by a fee collected at the Point of Sale and managed by a PRO.

### ***Report Structure***

The purpose of this Report is to provide the CIWMB with recommendations on EOL product management systems (Systems) that could be used in California to more effectively manage U-Waste (rechargeable and alkaline batteries; mercury thermostats and thermometers; fluorescent lamps; and consumer electronics) and latex and oil-based paint.

The Report is structured to provide:

- A model EOL product management system framework for this set of product types;
- Eight case-studies presented using the framework;
- Lessons learned from these case studies were used to help develop recommendations for this Report; and
- Next steps that the CIWMB could consider to determine an EOL product management system for each of the identified products.

### ***Limitations of This Study***

Limitations that should be considered in reviewing this Report are as follows:

- Forty different Systems were reviewed prior to selecting eight to be developed into case-studies. The eight Systems represent a broad range of Systems types, however, the findings are based on the eight case studies developed for this Report and the research conducted by the Contractor.
- The case studies are limited to the availability of System data as provided by the organizational representatives. The case studies highlight the disparity in quality and quantity of available data among the Systems. This can be most easily seen in how the programs identify performance goals, baseline data, and subsequent program effectiveness. For example, the programs that did not set clear performance goals, collect baseline data, or did not compare recovery rates to sales data were difficult to analyze for effectiveness.
- In addition, while the simplicity and success of some of the Systems seem compelling, it is important to take into account issues related to scale when applying the lessons learned from other programs to California. The size, population, and diversity of California must be taken into account when comparing and/or ultimately implementing any System.

# Methodology

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Over the last decade, a variety of End-Of-Life (EOL) product management systems (Systems) have been implemented around the world. Lessons learned from several of these Systems were used in order to provide recommendations for this Report. Existing reports, papers, and processes for current Systems were reviewed, and the contractor and CIWMB staff made contacts via e-mail with industry and government experts from around the world. This process included working with the Product Stewardship Institute (PSI) as a subcontractor because PSI had previously worked on some aspects of the case studies for four of the eight Systems selected to become case studies for this Report.

As descriptive information about the case studies was gathered, it became clear to the contractor that the descriptions of the case studies had to be within context of the entire financing, collection, and management system. As a result, a model which focused on clear descriptions of various stakeholder roles and responsibilities within systems was developed.

Then, in order to fully develop the case studies in a way that would facilitate evaluation of the Systems and develop recommendations, a model consisting of eight elements (Elements) was developed as a framework to present the information and provide a consistent “language” for the discussion. A detailed description of the model’s Elements is provided in the section below.

The next step was to compare the case studies using this common language to extract lessons learned from each System. Finally, recommendations were prepared in context of the core values and strategic directives for California.

## ***Anatomy of an EOL Financing and Management System: Elements***

For the purposes of this Report, the eight Elements of a System, listed in sequential order are:

1. Funding Mechanism
2. Funding Approach
3. Fee/Tax Collection Point
4. Fund Consolidation Point
5. Fund Oversight
6. Fund Management
7. Program Oversight
8. Program Operations

Each of these Elements represents decision points for the CIWMB to consider in developing California’s System. Elements #1 and #2, Funding Mechanism and Funding Approach, are key decisions that will directly impact the flow and possibilities of the subsequent System Elements. Elements #3 through #6 directly relate to the flow of money – from the point of collection, consolidation, who oversees the funding system, and who manages the fund itself. Elements #7

and #8 relate to the program – they identify who manages the product and who oversees the implementation of the collection/recycling system. Elements #1 through #7 ultimately relate to program design and management. Element #8 corresponds to the actual implementation or collection/recycling of products. The Elements are defined below with the California Electronics Recycling Act used as an example throughout to highlight how each Element might be identified in a System.

## 1. Funding Mechanism

The Funding Mechanism is the means by which funding for a product management system is obtained. There are two primary Funding Mechanisms: fees and taxes. It needs to be stated that “deposit systems” (i.e. California Redemption Value for bottles and cans) where consumers pay a deposit on a product that is given back to the consumer when the product is returned, is not a financing system, but rather is a collection incentive if we assume the full deposit is refunded to the consumer.

**Fee.** A fee is a charge that if collected by government, must be dedicated to, and used for, the governmental purpose related to the use of the item on which the fee is imposed. Fees can also be charged by entities other than government, such as Producer Responsibility Organizations (PROs) that can be made up of producers, retailers, and others. Fees may cover the full or partial cost of the service or program. Examples include advance disposal/recycling fee, franchise fee, solid waste tipping fee, utility fee, etc.

Fees are ultimately paid for by only one party in a System: the consumer of the product. When the consumer pays the fee at the Point of Sale, it is either visible on the receipt or invisible because it is built-in to the cost of the product. A *visible fee* is when the fee is a line item on a receipt so a consumer can identify the charge for the service provided. A visible fee can be considered a “retailer-based” system, whereas an *invisible fee*, often called full-cost pricing, is when the costs are built into the price of the product without differentiating that cost to the consumer. An invisible fee is considered “producer-based” because it allows normal competitive pricing to play out in the marketplace.

**Tax.** A tax is a compulsory payment to government by consumers, producers, or retailers. Products or services paid for with taxes do not necessarily have anything to do with the product or item on which the tax is charged.

Example: The California Electronics Recycling Act uses a **visible fee** as a Funding Mechanism by collecting \$6, \$8, or \$10 per covered electronic device from the consumer at the Point of Sale. The extra cost is itemized on the consumer’s receipt.

## 2. Funding Approach

The Funding Approach is the way by which a Funding Mechanism is implemented. There are two funding approaches that can be utilized in a System: voluntary or mandatory.

**Voluntary.** A voluntary Funding Approach is when there is no government requirement for any party to pay for the collection, transport, and recycling of a product. It relies on the voluntary participation of entities such as producers to pay for the cost to collect, transport, and recycle the product.

***Mandatory.*** A mandatory Funding Approach is when a public agency (city, county, state, or federal government) requires that an entity, such as a producer or consumer, pay for the cost to collect, transport, and recycle the product. Depending on how the fee/tax amount is established, the full cost to start and operate a collection system may or may not be covered.

Example: The California Electronics Recycling Act utilizes a **Mandatory** Funding approach requiring a visible fee be levied on each covered electronic device (\$6.00, \$8.00, or \$10.00 per unit depending on the product).

### **3. Fee/Tax Collection Point**

The Fee/Tax Collection Point describes any of the three points during a product's life where the fee/tax can be levied:

**Point of Manufacture (POM)** The producer pays the fee/tax. The fee/tax, if paid at this point, is generally built into the cost of the product as an invisible fee. For the purposes of this Report, the POM collection point is defined as the first person or entity in California to take title to the product. This is similar to what is currently done with the California used oil recycling program.

**Point of Sale (POS)** The consumer pays the fee/tax when the product is purchased. The retailer remits the money on behalf of the consumer to the entity consolidating the funds to support the program activities.

**Point of Discard (POD)** An entity, typically the consumer, pays the fee/tax to the collector or recycler when the product is disposed.

As context for the discussion around collecting the fee from the POM, in both Europe and in British Columbia, the "producer" is defined as those who place the products on the market in the retail-supply chain for the first time or who imports the product into a market. In the British Columbia Recycling Regulation Guide dated June 30, 2006, Producer is defined as, "The product producer is principally the first-seller of the product in the province. In practice, the producer is typically the product manufacturer, distributor, or brand-owner. The producer could be an importer, broker, or retailer who sells the product directly to a consumer, including those whose sales are transacted by catalogue or over the Internet."

Example: The California Electronics Recycling Act is a visible fee collected at the **Point of Sale** by the retailers on each covered electronic device.

### **4. Fund Consolidation Point**

The Fund Consolidation Point refers to the entity responsible for receiving the taxes/fees collected either at the Point of Manufacture, Point of Sale, or Point of Disposal. The entity managing the Fund Consolidation Point may be different from the entity responsible for Fund Oversight and Fund Management.

Example: The California Electronics Recycling Act requires retailers to remit fees collected from the consumer to the **State Government** (California Department of Equalization) for consolidation.

## 5. Fund Oversight

Fund Oversight is carried out by the entity responsible for ensuring that the collected money is being used by the program as intended. Responsibilities may include ensuring the transparency of fund allocations through fiscal audits.

Example: The California Electronics Recycling Act requires the **State Government**, specifically the California Integrated Waste Management Board, to oversee the Electronic Waste Recovery and Recycling Account.

## 6. Fund Management

Fund Management is carried out by an entity responsible for managing the administrative duties related to the disbursement of funds that support program activities.

Example: The California Electronics Recycling Act requires that **State Government**, specifically the CIWMB, disburse the funds to registered recyclers which are qualified by CIWMB.

## 7. Program Oversight

Program Oversight is carried out by an entity that establishes processes and procedures (which includes program performance outcomes) to oversee the operators of the program. Responsibilities vary depending upon overall System objectives and values and may include the following:

- Setting program performance measures;
- Ensuring a fair System by preventing “free riders”, and
- Ensuring proper recycling of product.

Example: The California Electronic Waste Recycling Act establishes a comprehensive program that addresses both the toxicity of certain (covered) electronic devices sold in the state and the funding for the collection and recycling of the covered electronic waste discarded by consumers. The program is overseen by **State Government**, including the Board of Equalization (BOE), the Department of Toxic Substances Control (DTSC), and the California Integrated Waste Management Board (CIWMB). The BOE collects advance recycling fees paid by consumers to retailer at the time of new device purchase. The DTSC regulates the physical management of collected waste and the operation of processing (recycling) facilities, including inspections of approved recyclers. The DTSC also promulgates the rules restricting the sale of devices that contain specific hazardous products. The CIWMB administers the payment system that provides funding to approved collectors and recyclers that handle and treat covered electronic waste. The CIWMB also receives required annual reports from manufacturers of covered devices, which contain information required by the Act relating to product design, hazardous constituents, and product sales.

## 8. Program Operations

Program Operations are conducted by the entity or entities which collect, transport, reuse and/or recycle the product and conduct public outreach for the program. This is frequently the Element that involves the largest number of stakeholders.

Example: The California Electronics Recycling Act Program Operations include the following entities: **producers, retailers, consumers, approved collectors, approved recyclers, and the State Government being CIWMB and DTSC.**

### *Development of Case Studies*

This report is not intended to include an exhaustive inventory of Systems worldwide but is a sampling of Systems that represent a diversity of approaches. The contractor first reviewed approximately 40 different Systems and evaluated them using the factors identified in the section below to refine the top 20 Systems as presented in Appendix A for consideration and possible development into case studies. Eight case studies were selected for thorough review in this Report. The factors of greatest importance that were used to select the case study Systems were the following:

- Program longevity;
- Availability of data;
- Addresses one or more of the eight product types of interest for this report; and
- Special features of interest, such as a high or low collection rate or cost to operate, small or large role by government, unique situations which offer insights into whether Systems of that type are effective;
- Mix of California, United States and international examples; and
- Mix of single state/province and national examples.

### *Development of Recommended System Elements*

The design of a particular System is based on the values of the entity making those decisions, so depending on an entity's particular key goals and motivations, the recommended System framework might change. The core values of the CIWMB are reflected in its adopted Strategic Directives. The Strategic Directives provide direction and objectives for staff and define where the Board wants staff to focus its efforts. The CIWMB core values used to develop the contractor's recommendations are discussed below.

#### Core Values

SD – 3: Minimize Waste – It is a core value of the CIWMB that all products be properly managed in order to minimize the generation of waste (source reduction), maximize the diversion of products from landfills, and manage all products to their highest and best use in accordance with the waste management hierarchy and in support of the California Global Warming Solutions Act of 2006;

SD – 5: Producer Responsibility – It is a core value of the CIWMB that producers assume the responsibility for the safe stewardship of their products in order to promote environmental responsibility. Specifically, the CIWMB will:

- Utilize existing Board authority to foster “cradle-to-cradle” producer responsibility.
- Seek statutory authority to foster “cradle-to-cradle” producer responsibility.
- Analyze the feasibility of various approaches to increasing producer responsibility, including during the product design and packaging phases, and make recommendations to the CIWMB Board by December 2007, and annually thereafter.
- Build capacity and knowledge in CIWMB on Extended Producer Responsibility (EPR) issues and solutions.
- Develop and maintain relationships with stakeholders that result in producer-financed and producer-managed systems for product discards.

SD – 6: Market Development – It is a core value of the CIWMB to assist in the development of viable, sustainable markets to divert products from landfills and encourage source reduction and recycling in accordance with the waste management hierarchy and in support of the California Global Warming Solutions Act of 2006.

SD- 8: Enforcement – It is a core value of CIWMB to manage and mitigate the impacts of solid waste on public health and safety and the environment by ensuring compliance with regulations and state minimum standards, through integrated and consistent permitting, inspection, and enforcement efforts.

# Case Studies

## CASE STUDY: Pesticide Container Recycling

<b>Product Type:</b>	Plastic Single Trip Pesticide Containers
<b>Effective Date:</b>	1992
<b>Location:</b>	Nationwide

### Section I. Overview

#### Issue Statement

Plastic pesticide containers have been traditionally burned or buried on farmland, reused improperly, or sent to landfills or incinerators. All of these methods pose potential hazards to the environment. As a result, the Ag Container Recycling Council (ACRC), a non-profit organization, was formed in 1992 to provide product stewardship through implementation of a nationwide recycling program for these containers.

#### The Program and Funding Approach

ACRC is a voluntary organization whose members consist of the companies that formulate, produce, package, and distribute crop protection and other pesticide products. ACRC conducts outreach through various stakeholder groups to make farmers/pesticide application companies aware of the collection and recycling program. ACRC contracts with five different collectors that work around the country to organize collection events and transport the plastic to recyclers. ACRC also works to increase the number of container collection sites and conducts pilot projects that will increase the efficiency and cost effectiveness of collection and recycling programs.

ACRC members pay an annual assessment based on their share of single trip, rigid, HDPE crop protection containers sold in the U.S. in the prior year. These assessments comprise the ACRC operational budget that pays for the services provided to recycle the containers. However, because membership is not mandatory, there is a shortfall in the funds available to meet the demand for recycling services. Out of a potential group of over 100 pesticide registrants, only

#### Case Study Selected Because...

ACRC is a voluntary producer responsibility organization that has existed for 13 years and is under-funded due to the "free rider" problem. Industry has requested the EPA to make participation in a recycling program mandatory for agricultural and professional specialty registrants of pesticides.

#### Funding Mechanism:

Voluntary fee at the Point of Manufacture.

#### Performance Goal

Recover as many containers as annual funding will allow.

#### Baseline Data

None. Not clear what was happening with containers prior to ACRC events. Some areas of the country collected and incinerated them. No entity is collecting nationwide sales data from all producers to estimate Ag plastic generation.

#### Effectiveness

Effectiveness is determined if total pounds increase annually. 2.5 million pounds were recycled in 1993 and 7.8 million pounds were collected in 2005.

Since 1993, 85 million pounds have been recycled.

40 founded the ACRC in 1992 and membership in 2006 dropped to 30. Thus, this program provides a “free ride” for more than half of the producers of pesticides because as a not-for-profit organization, the ACRC must collect all containers from member and non-member companies delivered to collection sites.

**Program Evolution**

With the decline in membership and increased demand for pesticide container recycling (many landfills no longer accept pesticide containers and open burning of containers is prohibited in many jurisdictions), the recycling program is in jeopardy. In 2005 and 2006, it left California and Washington State ACRC contractors without funds to provide container recycling services for the last three months of the year.

Due to concerns that the ACRC cannot continue on this path, members of the Association of American Pesticide Control Officials and industry representatives including CropLife America (national trade organization representing the nation’s developers, producers, formulators and distributors of plant science solutions for agriculture and pest management in the U.S.) in August 2005 requested the U.S. Environmental Protection Agency (EPA) to develop regulations to require that pesticide registrants participate in plastic container recycling. The EPA is expected to draft an advance notice of proposed rule making for public comment with the following potential standards [Source: EPA Pesticide Container Recycling Rule (December 2006)].

- Establish a mandatory duty for agricultural and professional specialty registrants to support recycling programs;
- Participation in recycling would be voluntary for retailers and pesticide users;
- Recycling programs must meet the American National Standards Institute (ANSI)/American Society of Ag and Biological Engineers container recycling consensus standard;
- Establish a minimum recycling rate to ensure adequate effort by registrants; and
- Require third party certification.

**Section II. Elements of an EOL Product Management System**

For analysis and comparison amongst case studies, eight components of an End-of-Life (EOL) Product Management System have been identified. The Funding Mechanism, Approach and Fee/Tax Collection Point each have two or three options. The other System Elements have an unlimited number of options which are dependent on the program design. The stakeholder roles and responsibilities are presented in Section III and the eight Elements of the System and how they interact are illustrated in the Section IV.

Element of System	Type		Stakeholder
Funding Mechanism	<i>Fee</i>	Tax	Producer
Funding Approach	<i>Voluntary</i>	Mandatory	Producer
Fee/Tax Collection Point	<i>Point of Manufacture</i>	Point of Sale	Point of Discard Producer

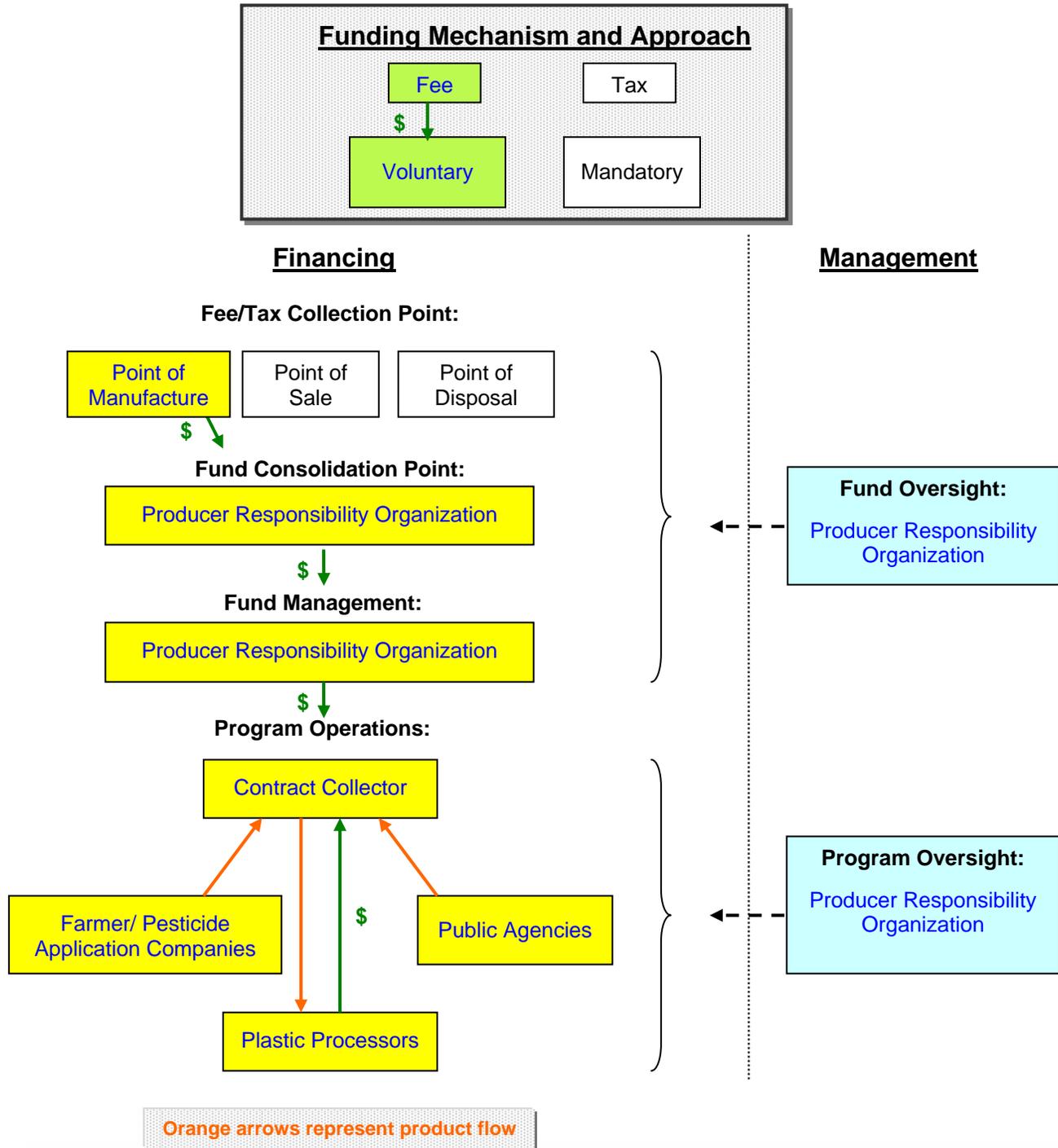
Element of System	Type	Stakeholder
<b>Fund Consolidation Point</b>	Producer Responsibility Organization	ACRC
<b>Fund Oversight</b>	Producer Responsibility Organization	ACRC
<b>Fund Management</b>	Producer Responsibility Organization	ACRC
<b>Program Oversight</b>	Producer Responsibility Organization	ACRC
<b>Program Operations</b>	Private Sector	Contract collectors, farmer/pesticide application companies plastic processors, public agencies

***Section III. Program Stakeholder Roles and Responsibilities***

Stakeholder	Role and Responsibility
<b>Producer</b>	Voluntarily becomes member of ACRC and pays fees to ACRC to fund outreach, collection, granulation, and transportation to recycled plastic processors and end users, and pilot projects to improve and enhance container recycling efforts.
<b>Farmer (Grower)/Pesticide Application Company</b>	Removes paper labels and triple rinses pesticide containers. Voluntarily agrees to work with ACRC contract collectors to have containers properly recycled. Accumulates and stores properly rinsed containers in lot sizes that are cost efficient to pick up for recycling or assists with transportation of containers to other collection site.
<b>Contract Collector</b>	Conducts outreach to increase participation in the program in their region. Services pre-established collection sites on a regular schedule. Granulates plastic and ships to recycler (processors and end users). Adheres to established ACRC container acceptance standards.
<b>Public Agency</b>	Local governments can advertise collection events, organize collection events, and pay for recycling when ACRC funding caps on contractors are reached.
<b>Federal Environmental Protection Agency</b>	Develops rules for the management of agricultural plastic containers. Participated in the development of ANSI consensus standard for proper agricultural pesticide container practices for effectiveness and safety in handling, cleaning, and recycling containers. Plans to promulgate regulations making producer participation in the recycling program mandatory.
<b>ACRC</b>	Encourages producers to become members and pay their market share to support the collection and recycling of agricultural pesticide plastic containers. Conducts pilot projects to increase efficiency and effectiveness of recycling program. Educates farmers about proper container management and the ACRC program. Evaluates methods of recycling container resins into valuable products.
<b>Plastic Processors</b>	Accepts the agricultural pesticide containers for processing from ACRC contractors. Processing may include grinding, washing, adding of compatibilizers and pelletizing.

**Section IV. EOL Product Management System Diagram**

The following is a diagram of the EOL Product Management System and the stakeholders. Each tier of the diagram represents the flow of decision-making points in the System.



### ***Section V. Cost to Establish the System***

Start-up costs included development of organization by-laws and purchase of office equipment. ACRC contractors incurred the capital costs of the mobile granulating and transportation equipment and amortize this over the term of their contracts. There is no data on exactly what the costs were, but they were considered by ACRC to be minimal.

### ***Section VI. Cost to Operate the System***

The ACRC 2006 budget was slightly over \$4 million. The budget includes the cost to administer the program, develop markets for agricultural pesticide container plastic, and pay contract collectors (\$3.5 million) to collect and ship plastic to recyclers.

### ***Section VII. Contact Information***

ACRC  
Ron Perkins, Executive Director  
1156 15<sup>th</sup>  
Washington DC, 20005  
(202) 861-3144  
[rperkins@acrecycle.org](mailto:rperkins@acrecycle.org)

Website: <http://www.acrecycle.org>

ACRC Contractor, Western Region  
Brad Bittleston  
Interstate Ag Plastics  
436 South Front Street  
Buttonwillow, CA 93206  
(661) 764-9614 Office  
(661) 332-6410 Cell  
[bbittle@gmail.com](mailto:bbittle@gmail.com)

Website: <http://interstateagplastics.com>

Environmental Protection Agency  
Jeanne Kasai  
1200 Pennsylvania Avenue NW Mail Code 7506P  
Washington D.C. 20460-0001  
(703) 308-3240

Website: <http://www.epa.gov/pesticides/>

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## CASE STUDY: Rechargeable Battery Recycling Corporation (RBRC) Call2Recycle™

<b>Product Type:</b>	Rechargeable batteries – Nickel Cadmium (Ni-Cd), Nickel Metal Hydride (Ni-MH), Lithium Ion (Li-ion), and Small Sealed Lead (Pb), Cell Phones.
<b>Effective Date:</b>	Formed in 1994, nationwide since 1996 and in Canada since 1997
<b>Location:</b>	Nationwide and Canada

### Section I. Overview

#### Issue Statement

The National Mercury-Containing and Rechargeable Battery Management Act (Act) became law on May 13, 1996 and was in-part what inspired the Rechargeable Battery Recycling Corporation (RBRC), a non-profit, public service organization created by the rechargeable power industry, to implement their recycling program nationwide.

The Act promotes the collection and recycling or proper disposal of used Nickel-Cadmium (Ni-Cd) batteries, used small sealed lead-acid (SSLA or Pb) batteries and certain other regulated batteries with market value for nickel and cadmium. It establishes national, uniform labeling requirements for Ni-Cd and certain SSLA rechargeable batteries and mandates that they be “easily removable” from consumer products. Under the Act, public agencies are encouraged to design recycling programs that target battery and product producers and battery waste handlers—not consumers—for the recovery and treatment of batteries.

California laws affecting rechargeable battery recycling include:

- In 2004, California passed the Cell Phone Recycling Act that requires the largest retailers to collect used cell phones at no cost to the consumer, to be reused, recycled or properly disposed.
- In 2005, California enacted the Rechargeable Battery Recycling Act, effective July 1, 2006, that mandates that retailers accept used rechargeable batteries, regardless of place of purchase, at no cost to the consumer and referenced RBRC by name.

#### Case Study Selected Because...

It is a system established voluntarily by the producers with 95% participation and has been in-place nationwide for a decade. RBRC considers the program effective.

#### Funding Mechanism:

Voluntary fee at the Point of Manufacture.

#### Performance Goal

To have a steady increase in collections each year.

#### Baseline Data

None.

#### Effectiveness

RBRC has seen annual increase in collection. Collected over 36 million pounds of rechargeables since 1995. 5.6 million pounds of rechargeables were collected in the U.S. in 2006.

### **The Program and Funding Approach**

Used rechargeable batteries and cell phones are collected through three avenues: 1) Consumers deposit used rechargeable batteries and old cell phones at over 48,000 retail store locations nationwide, from which the rechargeable batteries are collected and then transported to recycling facilities; 2) Communities and municipalities use a combination of collection options to collect used rechargeable batteries and old cell phones from the public and then send them to a recycling facility; and 3) Businesses and public agencies collect used rechargeable batteries and old cell phones in containers and ship them to an RBRC consolidation point.

Rechargeable battery producers and producers of products containing them [Original Equipment Producers (OEMs)] fund the recycling through the licensing of RBRC's Battery Recycling Seals. The batteries contain a RBRC seal that has a toll-free consumer help line that directs consumers to a drop-off site nearest to them. RBRC accepts and recycles all small rechargeable batteries regardless of whether the seal is on the battery or not. The program is free for consumers, retailers, communities, public agencies and businesses.

The batteries are recycled by INMETCO; the metals, such as nickel and cadmium, are recovered and used to make stainless steel the cadmium is further process to be used in new batteries. Used cell phones are recycled or refurbished and resold and a portion of the proceeds from the resale of phones benefits select charities.

RBRC provides public education through an extensive marketing effort that includes paid and non-paid TV, radio and print public service announcements. RBRC works with local jurisdictions to customize the published products to meet local needs. RBRC's advertising and public relations efforts include RBRC spokesperson, Richard Karn, "Al" from TV's *Home Improvement*; Danny Seo, *ecostylist and author*; and Guy Fafleur, *National Hockey League Hall of Famer*.

### **Program Evolution**

RBRC instituted a nationwide rechargeable Ni-Cd battery recycling program in 1996 called *Charge Up to Recycle!*<sup>®</sup>. The program was expanded to include Canada in 1997 and further to include all small rechargeable batteries in 2001. In 2004, RBRC enlarged the collection program to include used cell phones, thereby changing the program name to *Call2Recycle*<sup>™</sup>. RBRC's, *Call2Recycle*<sup>™</sup> program promotes the recycling of the following rechargeable battery chemistries: Ni-Cd, Nickel Metal Hydride (Ni-MH), Lithium Ion (Li-ion), and SSLA and cell phones.

According to RBRC, in 1999 consumers used an average of three cordless products per day and in 2005 that increased to six. With purchases of products containing rechargeable batteries doubling from 1999-2005, it can be assumed that there are significantly more batteries to collect from consumers now than there were in 1999.

## ***Section II. Elements of an EOL Product Management System***

For analysis and comparison amongst case studies, eight components of an End-of-Life Product Management System have been identified. The Funding Mechanism, Approach and Fee/Tax

Collection Point each have two or three options. The other System Elements have an unlimited number of options which are dependent on how the program was set up. The stakeholder roles and responsibilities are presented in Section III and the eight Elements of the System and how they interact are illustrated in the Section IV.

Element of System	Type		Stakeholder	
<b>Funding Mechanism</b>	<i>Fee</i>	Tax	Consumer	
<b>Funding Approach</b>	<i>Voluntary</i>	Mandatory	Producer	
<b>Fee/Tax Collection Point</b>	<i>Point of Manufacture</i>	Point of Sale	Point of Discard	Producer
<b>Fund Consolidation Point</b>	Producer Responsibility Organization		RBRC	
<b>Fund Oversight</b>	Producer Responsibility Organization		RBRC	
<b>Fund Management</b>	Producer Responsibility Organization		RBRC	
<b>Program Oversight</b>	Producer Responsibility Organization		RBRC	
<b>Program Operations</b>	Producer Responsibility Organization, Private Sector		RBRC, battery producers and OEMs, retailer, consumer, recycler, advertiser	

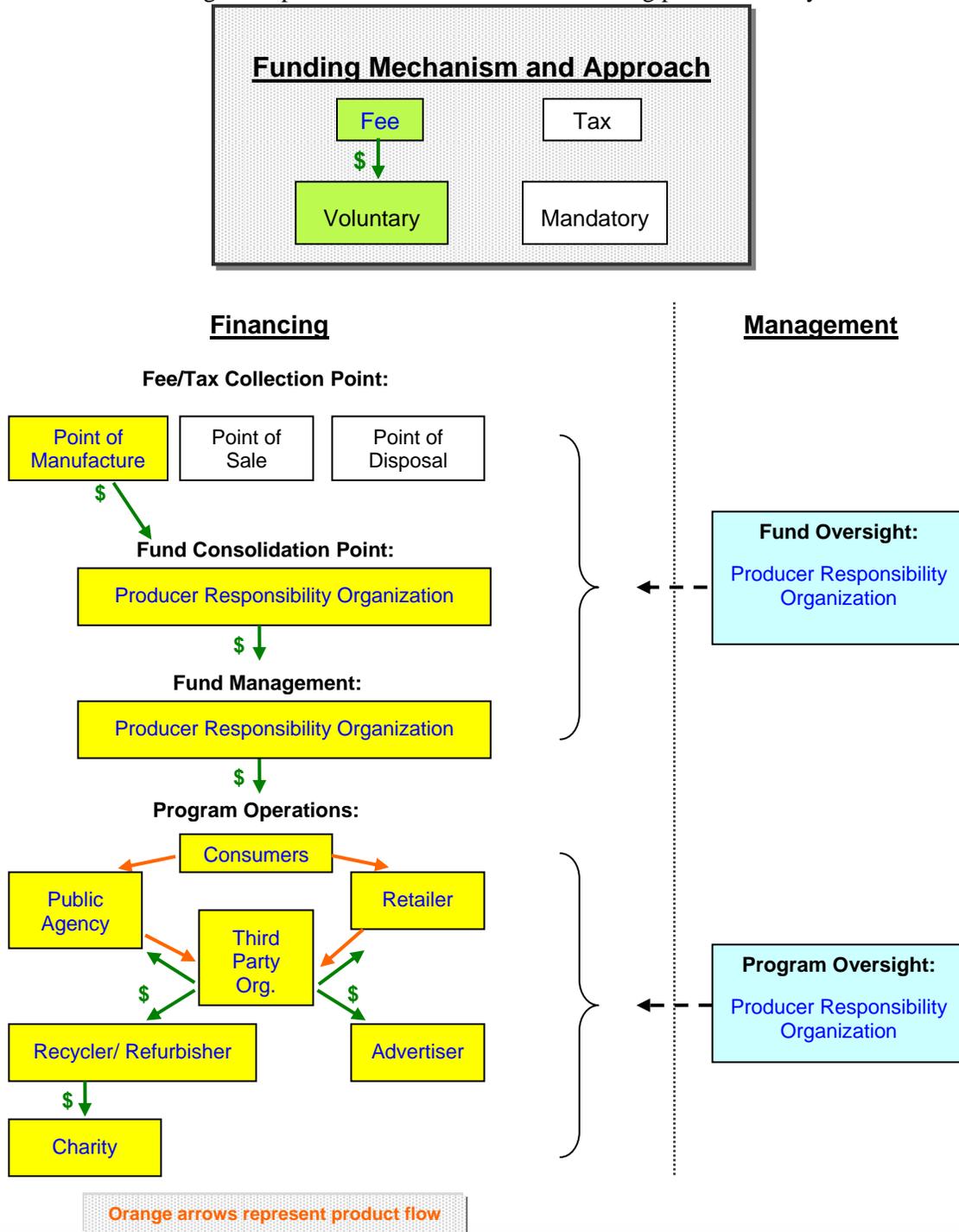
### Section III. Program Stakeholder Roles and Responsibilities

Stakeholder	Role and Responsibility
<b>Consumer</b>	Returns used rechargeable batteries and cell phones free of charge at retail, community, public agency, municipal and business locations (or curbside programs) in the U.S. and Canada. RBRC pays for education, collection, transportation and recycling.
<b>Battery and Product Producers (OEM)</b>	Pays RBRC licensing fees for use of RBRC battery recycling seals. Prints RBRC Battery Recycling Seal on all rechargeable batteries produced for retail sale by the 95% participating producers that pay into the program. Also includes recycling information on product packaging and instructions.
<b>Retailer</b>	Displays educational information on rechargeable battery and cell phone recycling for consumers. Provides retail space for used rechargeable battery and cell phone collection containers. Ships containers to consolidation point (costs covered by RBRC).
<b>Public Agency</b>	Collects batteries and cell phones and ships to RBRC consolidation point.
<b>Federal Environmental Protection Agency</b>	Establishes a public education program on battery recycling and the proper handling and disposal of used batteries, as part of responsibility to enforce the Battery Act of 1996.

Stakeholder	Role and Responsibility
<b>RBRC</b>	Develops collection program and maintains public education outreach. Performs and pays for all responsibilities associated with collection, transportation, and recycling. Encourages full compliance with the Act. RBRC supplies collection boxes and pays for transportation and recycling.
<b>Recycler/ Refurbisher</b>	Accepts batteries from RBRC and metals are recovered and recycled. Used cell phones are recycled or refurbished and sold.
<b>Advertiser</b>	Promotes the RBRC program nationally and also provides in-store advertisements to encourage consumers to bring batteries and cell phones back.

### Section IV. EOL Product Management System Diagram

The following is a diagram of the EOL Product Management System and the stakeholders. Each tier of the diagram represents the flow of decision-making points in the System.



### ***Section V. Cost to Establish the System***

Cost to incorporate a 501c3 organization. Dollar amount was not reported.

### ***Section VI. Cost to Operate the System***

The 2007 budget is \$14.5 million. Of the budget, \$7.7 million is dedicated to marketing and communications. Since the program began, RBRC has spent \$1.5 million on software development to operate the system.

### ***Section VII. Contact Information***

Rechargeable Battery Recycling Corporation  
Norm England, President RBRC  
(678) 419-9984  
[nengland@rbc.com](mailto:nengland@rbc.com)

Website: <http://www.rbc.org/call2recycle/>

## CASE STUDY: Maine Mercury Thermostat Stewardship Law

<b>Product Type:</b>	Mercury-Containing Thermostats
<b>Effective Date:</b>	January 1, 2007
<b>Location:</b>	State of Maine

### Section I. Overview

#### Issue Statement

On February 7, 2006, the Maine Department of Environmental Protection (ME DEP) proposed a revision to LD 1792, which previously had been a straight bounty bill. ME DEP's revision was developed through a consensus, mediated by the Product Stewardship Institute, among Honeywell, White Rodgers, Natural Resources Council of Maine, Environmental Health Strategy Center, and ME DEP. The new law requires all producers of mercury-containing thermostats to be responsible for the collection and recycling of their mercury thermostats and establishes a recycling incentive program.

#### The Program and Funding Approach

The ME DEP is tasked with developing a two-phased plan, through a stakeholder process, that specifies an incentive be paid to contractors and service technicians (by January 1, 2007) and homeowners (by August 1, 2007). The new law also requires producers to pay a \$5 minimum financial incentive for each mercury thermostat returned either as cash, a rebate, etc. This law is the first in the nation to require producers to pay a financial incentive for each mercury thermostat returned. In addition, the law requires the plan to encourage the purchase of non-mercury Energy Star qualified thermostats as replacements.

The producers are responsible for administering and advertising the program. The Thermostat Recycling Corporation (TRC) operates nationwide and voluntarily administers a take-back program for mercury thermostats. A producer can comply with the law by either joining TRC or submitting their own plan to reimburse the contractors/homeowners directly. Retailers are prohibited from selling ANY thermostats from non-compliant producers, and retailers and producers will be held responsible for

#### Case Study Selected Because...

It's the first law in the nation to require producers to pay a financial incentive for each mercury thermostat returned and require thermostat collection from do-it-yourselfers.

#### Funding Mechanism:

Mandatory fee at the Point of Manufacture.

#### Performance Goal

Phase 1--recapture 125 lbs. of mercury per year within 2 years of Phase 1. Would recycle an estimated 70% of mercury thermostats removed annually from Maine.

Phase 2--recapture 160 lbs. of mercury per year within 3 years after phase 2 begins. Would recycle an estimated 90% of all mercury thermostats annually removed.

#### Baseline Data

In 2006 there was 5,600 pounds of mercury contained in Maine home and business thermostats.

#### Effectiveness

To be determined.

violations of the sales prohibition.

The State’s role in the program is to annually monitor the effectiveness of the program through receiving annual reports beginning in 2008. The law contains an annual performance goal of recapturing 125 pounds of mercury per year within two years after Phase 1 begins (based on an average of 4 grams of mercury per thermostat) – equaling a goal of 70 percent of all mercury thermostats removed annually from buildings in Maine. There is a second annual goal of 160 pounds of mercury per year within three years after Phase 2 begins – equaling a goal of 90 percent of all mercury thermostats removed annually. DEP’s annual report to the Legislature will include a re-evaluation of these goals. This program and funding approach is based on the State’s successful electronic waste law which has been in effect since January 1, 2006.

The law will complement a law already in effect as of January 1, 2006 that prohibits the sale of mercury-added thermostats in Maine, and another that bans wholesalers from selling any thermostat unless they collect mercury thermostats for recycling.

**Program Evolution**

No fundamental program changes have yet occurred.

***Section II. Elements of an EOL Product Management System***

For analysis and comparison amongst case studies, eight components of an End-of-Life Product Management System have been identified. The Funding Mechanism, Approach and Fee/Tax Collection Point each have two or three options. The other System Elements have an unlimited number of options which are dependent on how the program was set up. The stakeholder roles and responsibilities are presented in Section III and the eight Elements of the System and how they interact are illustrated in the Section IV.

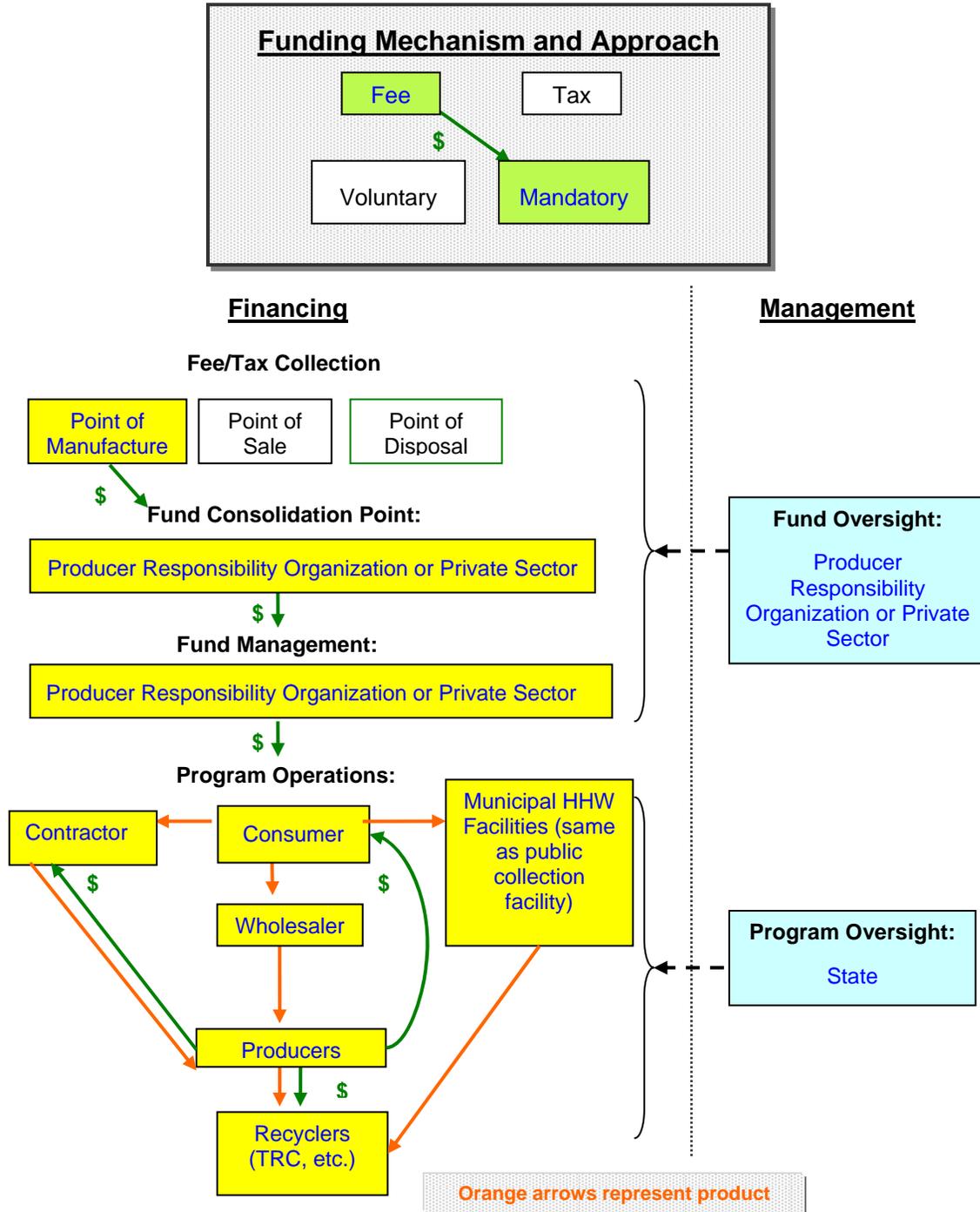
Element of System	Type		Stakeholder	
<b>Funding Mechanism</b>	<i>Fee</i>	Tax	Producer	
<b>Funding Approach</b>	Voluntary	<i>Mandatory</i>	Producer	
<b>Fee/Tax Collection Point</b>	<i>Point of Manufacture</i>	Point of Sale	Point of Discard	Producer, or companies that have the brand name. Does not include importers or distributors.
<b>Fund Consolidation Point</b>	Private Sector		TRC or producer	
<b>Fund Oversight</b>	Private Sector		TRC or producer	
<b>Fund Management</b>	Private Sector		TRC or producer	
<b>Program Oversight</b>	State Government		State: ME DEP	
<b>Program Operations</b>	Private Sector, State Government		Producer, homeowner, retailer, contractor, collection facility, recycling facility, state government	

***Section III. Program Stakeholder Roles and Responsibilities***

Stakeholder	Role and Responsibility
<b>Consumer</b>	Returns mercury thermostats for recycling. Receives \$5 coupon for each returned mercury thermostat. Details of the phase II Homeowner Programs to be determined by stakeholder process by August 1, 2007.
<b>Contractor/Technician</b>	Returns mercury thermostat for recycling to wholesaler, contractor office, or uses a collection bin. Receives \$5 coupon for each returned mercury thermostat. Mails coupon to producers' third party administrator for check, or encloses coupon with a thermostat in the collection bin.
<b>Retailer</b>	Prohibited from selling thermostats of any kind from non-compliant producers.
<b>Producer</b>	Establishes and maintains a collection and recycling program for its own mercury thermostats. Can meet obligation individually or collectively (e.g., as part of TRC or other 3 <sup>rd</sup> party organization). Ensures that bins are made available for mercury thermostat collection at HVAC, plumbing, and electrical wholesalers; at contractor locations; and at public Universal Waste permanent collection sites. Reports annually to the ME DEP. Pays a \$5 financial incentive payment for each mercury thermostat returned to a ME DEP-approved collection site.
<b>State: Department of Environmental Protection</b>	Manages stakeholder group to develop two-phase producer financial incentive plan for contractors/service technicians and homeowners. Approves producer plans. Reports annually to the joint standing committee on natural resources. Approves collection sites. Enforces against non-compliant producers and retailers. Reviews annual reports from producers providing status on the program.
<b>Contractor, Wholesaler or Public Collection Facility</b>	Collects product from contractors and homeowners. Gives the \$5 incentive coupon to consumer or contractor technician. Sends devices to TRC or producer designated recycling facilities.
<b>Recycling Facility</b>	Recovers the mercury from the devices for reuse.

**Section IV. EOL Product Management System Diagram**

The following is a diagram of the End-of-Life Product Management System and the stakeholders. Each tier of the diagram represents the flow of decision-making points in the System.



***Section V. Cost to Establish the System***

The State sets the requirements and performance goals and receives annual reports identifying performance. The State estimates that the program will take a staff person half their time equating to approximately \$50,000 for the first year. All other program costs to administer the program are performed by the private sector.

***Section VI. Cost to Operate the System***

The State estimates that the annual monitoring of the program will require a quarter of a staff person's time which equates to approximately \$25,000 a year. All other program costs to administer the program are performed by other stakeholders.

***Section VII. Contact Information***

Maine Department of Environmental Protection  
Ann Pistell, Environmental Specialist  
207-287-7703  
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Website: <http://janus.state.me.us/legis/statutes/38/title38sec1665-B.html>

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## **CASE STUDY: Maine Electronic Waste Law**

<b>Product Type:</b>	Electronic Waste
<b>Effective Date:</b>	January 1, 2006
<b>Location:</b>	State of Maine

### ***Section I. Overview***

#### **Issue Statement**

The State of Maine has been enacting legislation designed to remove hazardous products from disposal and encouraging recycling and industries to design components that are less toxic and more recyclable. This is the case with electronic waste which had legislation that became effective January 1, 2006 to have municipalities responsible for collection and producers responsible for consolidator handling and transportation, and recycling of household televisions and computer monitors.

#### **The Program and Funding Approach**

The law only pertains to household televisions (including portable DVD players) and computer monitors (including laptops) consisting of a central processing unit, a cathode ray tube, a cathode ray tube device, a flat panel display of similar video display device with a screen larger than four inches measured diagonally and that contains one or more circuit boards.

The Maine Department of Environmental Protection (ME DEP) is responsible for overseeing the program and evaluating its overall success. In addition, the ME DEP is responsible for authorizing Consolidators (collection centers) to participate in the program and approves the fees the Consolidators will charge producers for the transportation, handling, and recycling of the product. All producers selling in the State have to abide by the regulations and agree to pay the Consolidators, if used; otherwise they cannot sell in the State. The producer must present a plan to the State identifying how they intended to meet the criteria of the law.

Producers must sell devices with their name permanently affixed to allow identification during the recycling process. Consolidators charge the producers on a per pound basis only for their brands. Any orphan waste is allocated pro rata between the commodities—television producers pay for orphan televisions, etc. Because the

#### **Case Study Selected Because...**

The State has a minimal role in the program by setting the requirements and authorizing consolidation points while the producers implement and manage their own system to meet the law's requirements.

**Funding Mechanism:**  
Mandatory fee at the Point of Manufacture.

#### **Performance Goal**

Collect as much material as possible. Mercury-added products and CRT disposal bans in effect. No performance goals are stated in the law.

#### **Baseline Data**

State estimates that households generate about 1.75 lbs./person which calculates to 65,000- 110,000 units annually.

#### **Effectiveness**

In first 6 months of the program, 14,068 TVs and 10,500 monitors were collected for a total of 646 tons.

producers pay for the recycling at the end-of-life (EOL), the law requires that if the cost is to be passed on to the consumer, the fee must be built into the cost of the product. If a producer does not pay the Consolidators then the State may pay for it, but the producer is liable for paying the State three times the cost.

Other responsibilities the producers have are to perform public education to let consumers know of the recycling program, and report to the State annually on the amount of collected products.

**Program Evolution**

No fundamental program changes have occurred.

***Section II. Elements of an EOL Product Management System***

For analysis and comparison amongst case studies, eight components of an EOL Product Management System have been identified. The Funding Mechanism, Approach and Fee/Tax Collection Point each have two or three options. The other System Elements have an unlimited number of options which are dependent on how the program was set up. The stakeholder roles and responsibilities are presented in Section III and the eight Elements of the System and how they interact are illustrated in the Section IV.

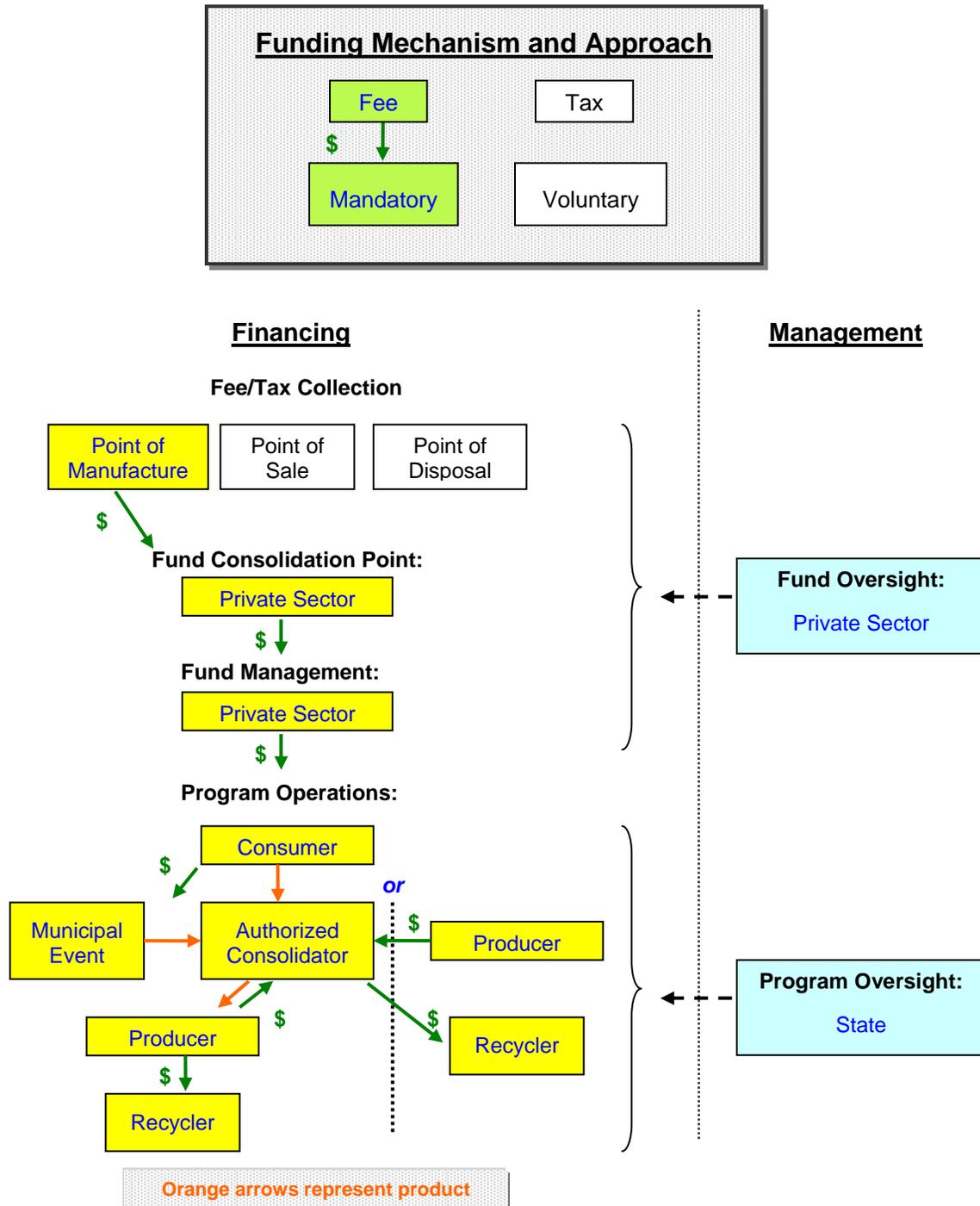
Element of System	Type			Stakeholder
<b>Funding Mechanism</b>	<i>Fee</i>	Tax		Producers
	Producer cost internalization; optional EOL fee to finance municipal collection operations			
<b>Funding Approach</b>	Voluntary	<i>Mandatory</i>		Producers
<b>Fee/Tax Collection Point</b>	<i>Point of Manufacture</i>	Point of Sale	Point of Discard	Producers
<b>Fund Consolidation Point</b>	Private Sector			Producers
<b>Fund Oversight</b>	Private Sector, State Government (enforcement only)			Producers, Consolidators, State: Maine DEP
<b>Fund Management</b>	Private Sector			Producers, Consolidators
<b>Program Oversight</b>	State Government			State: ME DEP
<b>Program Operations</b>	State Government, Private Sector			State: ME DEP and Attorney General, producer, consumer, municipality, retailer, Consolidators, recycling facility

***Section III. Program Stakeholder Roles and Responsibilities***

<b>Stakeholder</b>	<b>Role and Responsibility</b>
<b>Consumer</b>	Returns monitors to Consolidators or municipal drop-off events.
<b>Municipality</b>	Give any collected monitors from collection events to a Consolidator for the ultimate recycling of the devices; may charge small EOL fee to pay for the collection operations.
<b>Retailer</b>	Prohibited from selling monitors from non-compliant producers.
<b>Producer</b>	Establishes a plan to handle the recycling of their products and public education of the recycling program. Can recycle the product through their facilities, but still have to pay Consolidators for the transportation and handling costs, if any. Reports annually to the State the description of collection, consolidation and recycling services, estimates of the amount sold in the State the previous year, capture rate for electronics based on sales in the State, and any systems implemented to ensure environmentally sound management of its products. Has option to join with other producers to manage the waste stream. If the producer applies the recycling fee to consumers, it has to be built into the cost of the product. Pays the Consolidator for transportation, handling and recycling of the products of their brand. Also pays pro rata of orphan waste if responsible for more than 1 percent of the waste stream.
<b>State: Department of Environmental Protection</b>	Oversees the program, authorizes Consolidators to be a part of the program and approves the fees that will be charged to the producers. Pays the Consolidator only when a producer does not; producer liable for 3 times the cost.
<b>Collection Facility (Consolidation Center)</b>	Transports and handles collected products. Products are delivered to an authorized Consolidator, which sends the product to a recycler. Charges the producer directly based on the amount of their brand products collected.
<b>Recycling Facility</b>	Recovers the recyclable products from the devices for reuse. Must meet Maine DEP Environmentally Sound Management Guidelines.

**Section IV. EOL Product Management System Diagram**

The following is a diagram of the EOL Product Management System and the stakeholders. Each tier of the diagram represents the flow of decision-making points in the System.



***Section V. Cost to Establish the System***

The State estimates that the program took three full-time employees equating to the cost of approximately \$210,000 for the first year. This includes all research necessary to identify brands and producers subject to the law, and perform errors and omissions and compliance work to bring producers into compliance with requirements. No producer and brand database existed when Maine established its law; Maine shares its database with other states as requested. All other program costs to administer the program are performed by the private sector.

***Section VI. Cost to Operate the System***

The State estimates that the annual monitoring of the program will require two full time employees, which equates to approximately \$150,000 per year. All other program costs to administer the program are performed by the private sector.

***Section VII. Contact Information***

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## CASE STUDY: California Oil Recycling Enhancement Act

<b>Product Type:</b>	Used Lubricating Oil
<b>Effective Date:</b>	January 1, 1992
<b>Location:</b>	State of California

### Section I. Overview

#### Issue Statement

In 1991 the California Legislature determined that threats to public health and the environment caused by the improper or illegal disposal of used lubricating oil (a hazardous waste in California) required an immediate and comprehensive statewide response. As a result, the Legislature passed the California Oil Recycling Enhancement (CORE) Act (PRC Section 48600 et seq.), which became effective January 1, 1992. The CORE Act, administered by the California Integrated Waste Management Board (CIWMB), is a law designed to recycle and reclaim used lubricating oil to the greatest extent possible and to discourage the illegal disposal of used oil.

#### The Program and Funding Approach

There are five major program activities: recycling incentive payments, network of used oil collection centers, grants to support local collection programs, statewide education/outreach, and a monitoring/inspection program.

To support the program, the law (PRC §48619) requires oil producers, defined as the first person or entity in California to take title to lube oil, to pay quarterly to the State \$0.16 for each gallon of lubricating oil sold, transferred, or imported for use in California. Revenue is deposited in the State's Used Oil Recycling Fund and amounts to approximately \$20 million annually for program operation.

A recycling incentive of \$0.16 per gallon is then offered to registered industrial generators, curbside collection programs, certified collection centers (CCCs), and at-home mechanics for each gallon of used lubricating oil recycled.

The public receives the incentive payment directly from the collection center operator and the collection programs request the incentive payment from the State. The majority of the used oil is collected through the network of 2,800 CCCs, primarily operated by auto parts stores, which provide convenient collection opportunities. Auto parts stores report that their customers spend

#### Case Study Selected Because...

The CORE Act represents a successful and mature program that incorporates an advance disposal fee.

#### Funding Mechanism:

Mandatory fee at Point of Manufacture.

#### Performance Goal

To recycle and reclaim used oil to the greatest extent possible. No quantifiable goal(s) in statute.

#### Baseline Data

*In 1989, only 5% of the oil available from at-home mechanics or DIYers was properly collected and recycled.*

#### Effectiveness

The collection rate of all available used motor oil is approximately 93%; 83% from DIYers.

on average \$61 when they bring their oil in for recycling. The majority of the public does not request the recycling incentive payment.

The largest program expense is the \$10 million allocated annually for non-competitive grants to support local government used oil recycling programs. Local governments receive a per capita allocation to both educate the public, primarily at-home mechanics, and support the CCC program and other collection opportunities such as events or curbside collection.

There are also three competitive grant programs that support the used oil collection infrastructure and statewide education/outreach and research projects to supplement local collection programs.

Oil collected at CCCs is then transported for re-refining or re-use to a registered used oil recycling facility. The State inspects used oil recycling facilities as well as handlers and transfer facilities to ensure compliance with hazardous waste products handling regulations.

**Program Evolution**

The only significant change has been the change in the state entity which collects the fee. The Board of Equalization previously collected the recycling fee (16 cents per gallon) from the producer, and now the CIWMB collects it directly from the producer, which reduced staffing levels and program costs.

**Section II. Elements of an EOL Product Management System**

For analysis and comparison amongst case studies, eight components of an End-of-Life Product Management System have been identified. The Funding Mechanism, Approach and Fee/Tax Collection Point each have two or three options. The other System Elements have an unlimited number of options which are dependent on how the program was designed. The stakeholder roles and responsibilities are presented in Section III and the eight Elements of the System and how they interact are illustrated in the Section IV.

Element of System	Type		Stakeholder	
<b>Funding Mechanism</b>	<i>Fee</i>	Tax		Producer, retailer, or first person or entity in CA to take title to lube oil
<b>Funding Approach</b>	Voluntary	<i>Mandatory</i>		State: CIWMB
<b>Fee/Tax Collection Point</b>	<i>Point of Manufacture</i>	Point of Sale	Point of Discard	Producer, retailer, or entity that takes title
<b>Fund Consolidation Point</b>	State Government			State: CIWMB
<b>Fund Oversight</b>	State Government			State: Department of Finance (DOF) and CIWMB (grants)
<b>Fund Management</b>	State Government			State: CIWMB
<b>Program Oversight</b>	State Government			State: CIWMB and Department of Toxic Substances Control (DTSC)

Element of System	Type	Stakeholder
<b>Program Operations</b>	Government (Local & State), Private Sector	State: CIWMB, local government, refineries, non-profit and private grantees, haulers, recyclers, and retail chains that operate CCCs

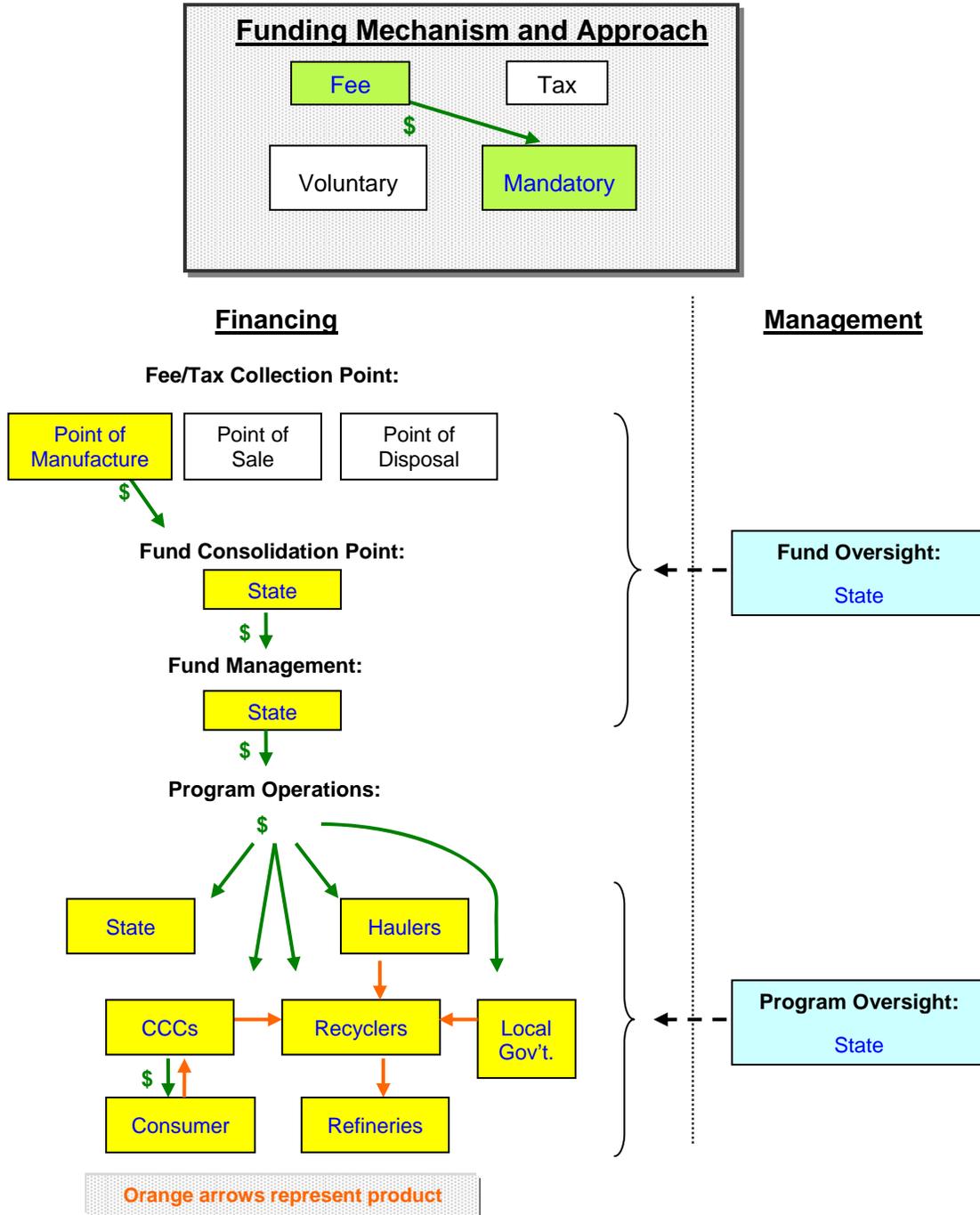
***Section III. Program Stakeholder Roles and Responsibilities***

Stakeholder	Role and Responsibility
<b>Producer</b>	Internalizes fee of \$0.16 per gallon of lubricating oil sold, transferred, or imported for use in California. Remits fee to State each quarter based on amount of lubricating oil reported sold which does not meet the criteria for a fee exemption. Passes fee through supply chain by separating the payment of \$0.16 per gallon recycling fee from the purchase price of oil.
<b>Consumer</b>	Pays invisible \$0.16 per gallon fee on lubricating oil purchased. In addition, those that change their own oil (does not use a business for the service), become the generator of used lubricating oil and are responsible to handle or dispose of used oil according to California State regulations.
<b>State: CIWMB</b>	Implements legislation that includes various programmatic and regulatory oversight. Collects fees from producers using 4 staff, conducts education, outreach, and research; administers the grant programs; certifies used oil collection centers; provides incentive payments and manages the Used Oil Recycling Fund.
<b>State: Department of Toxic Substances Control</b>	Registers and inspects used oil haulers and used oil recycling facilities and takes enforcement actions as necessary. (Local governments and used oil collection centers must provide manifests that their used lubrication oil has been transported to such facilities in order to be eligible for the recycling incentive payment from the CIWMB.
<b>State: Department of Finance</b>	Conducts compliance audits on fee payers and grantees and audits the Fund management and expenditures.
<b>Local Jurisdictions/ Non-Profits</b>	Establishes local used oil collection programs that include the recruitment of certified collection centers, public outreach and education, operating permanent facilities and temporary collection events, and financial support for transportation of used oil to recycling facilities. These activities are funded primarily with annual grants determined by a per capita formula. Local governments may also operate a curbside collection program and in doing so are also eligible to receive the recycling incentive from the State.

Stakeholder	Role and Responsibility
<p><b>Certified Collection Centers (Private Sector/Retailers)</b></p>	<p>As a “certified collection center,” agrees to certain hours of operation to accept used oil from the public at no charge and verbally offer the \$0.16 per gallon recycling incentive to the consumer, although most consumers do not accept the incentive payment. The CCC is eligible to receive an incentive payment of \$0.16 per gallon from the State for used oil collected and transported by a licensed used oil hauler to an approved recycling facility. Reports quarterly to the State the amount of lubricating oil purchased and amount of used oil collected and transported to get incentive payment.</p>
<p><b>Registered Industrial Generator, Curbside Collection Program</b></p>	<p>Registers with the State as a collector or generator of used oil and is eligible to receive the used oil recycling incentive either for used oil collected through a curbside collection program or from used lubricating oil generated from equipment owned or used by the entity.</p>
<p><b>Registered Hauler</b></p>	<p>Issues manifests or modified manifest receipts showing the total amount of used lubricating oil transported to a certified recycling facility for purposes of redeeming a recycling incentive by a CCC or local government. Haulers are subject to inspection by the State (DTSC) and must abide by regulations governing the management of hazardous waste.</p>

**Section IV. EOL Product Management System Diagram**

The following is a diagram of the EOL Product Management System and the stakeholders. Each tier of the diagram represents the flow of decision-making points in the System.



### ***Section V. Cost to Establish the System***

Initial costs to establish the system included staffing to collect revenue from producers, recruit CCCs and develop public education and outreach campaigns. All costs are unknown.

### ***Section VI. Cost to Operate the System***

Annual revenues paid for by fees from lubricating oil sales amount to approximately \$20 million for program operation. Revenue exceeded annual cost to operate the program during the first decade of the program. Annual revenue of \$20 million has been sufficient to operate the program due to level of funding carried over each year, although the formula of statutory expenditures leads to diminishing resources for expenditures by the State for outreach/education and competitive grants. Currently, the annual budget is approximately \$23 million, including required reserves.

The cost to operate the system includes the cost of government to manage grant programs, payment of recycling incentives and of contaminated oil payments, and other program administration as well as direct program expenditures, primarily for grants. The cost of government to manage the program includes multiple State agency expenses (CIWMB, DTSC & DOF). CIWMB has four staff dedicated to collect the fees from the manufacturers. Approximately \$3.5 million in recycling incentives are paid annually to certified collection centers, curbside collection programs, and registered industrial generators while claims for contaminated oil payments are under \$5,000 annually on average. Non-competitive grants are available to e local government in California for the implementation of local used oil collection programs in a total annual amount equal to \$10 million or half of the amount which remains in the fund after other specified expenditures pursuant to Public Resources Code §48653. Other grant programs that provide for additional opportunities for used oil collection by establishing used lubricating oil collection centers amount to approximately \$2.4 million in 2006 although funding available for competitive grants is declining as a result of the funding formula in statute. Other costs for education, research and development of grants/contracts are approximately \$800,000.

### ***Section VII. Contact Information***

California Integrated Waste Management Board  
Special Waste Division, Used Oil & HHW Branch  
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Special Waste Division, Used Oil & HHW Branch  
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Website: [www.ciwmb.ca.gov/UsedOil](http://www.ciwmb.ca.gov/UsedOil)

## CASE STUDY: California Electronic Waste Recycling Act

<b>Product Type:</b>	Electronic Waste
<b>Effective Date:</b>	January 1, 2005
<b>Location:</b>	State of California

### Section I. Overview

#### Issue Statement

In 2003, California became the first U.S. state to establish a financing mechanism for the management of certain hazardous electronic wastes (E-Waste). The Electronic Waste Recycling Act of 2003, otherwise known as SB 20, established an advanced recycling fee (ARF) on retail sales of covered electronic wastes (CEWs).

#### The Program and Funding Approach

The State of California Department of Toxic Substances Control (DTSC) identifies CEWs as video display devices with screens greater than four inches that are presumed to be hazardous when disposed. Current CEWs are cathode ray tube (CRT) devices, CRT televisions and computer monitors; Liquid Crystal Display (LCD) televisions and desktop monitors; laptop computers with LCD displays; and plasma televisions sold in California. The ARF began in January 1, 2005 and ranges from \$6-\$10 depending on screen size, and is paid by the consumer at the Point of Sale.

Retailers submit collected fees to the State Board of Equalization (BOE) on a quarterly basis. The fees are deposited into an account, which is managed by another state agency California Integrated Waste Management Board (CIWMB). These funds are distributed by the CIWMB to over 500 approved E-waste collectors and more than 50 recyclers to reimburse the net costs of collecting and recycling CEWs.

Recyclers are reimbursed \$0.48/lb. of eligible CEW products collected and recycled, \$0.20/lb. of which must be passed on to the approved collector. Producers who take back their products for recycling may also request reimbursements. Funds are allocated to DTSC for overseeing the management of hazardous electronic wastes, enforcement activities and determination of CEWs through testing of video display

#### Case Study Selected Because...

California program that has been in place for 2 years and the program funding mechanism is applicable to all material types in this study.

#### Funding Mechanism:

Mandatory fee at the Point of Sale.

#### Performance Goal

Provide financial relief to local government; Provide cost free collection opportunities for the public; Eliminate E-waste stockpiles and legacy devices by December 31, 2007.

#### Baseline Data

CIWMB E-waste study in 2001 estimated that 6 million TVs and computers were stored in residences.

#### Effectiveness

Approximately 32,500 tons of CEWs were collected in 2005 and doubled in 2006 to approximately 65,000 tons.

To date, local government costs are virtually eliminated; Public has access to cost-free collection with over 500 collectors and over 50 recyclers.

devices. The CIWMB uses reports from collectors and recyclers to determine any adjustments to the ARF or payment rate. Consumers have access to free and convenient collection centers, but do not receive a refund when recycling their unwanted devices.

The CIWMB promotes the program by directing consumers to [www.ecycle.org](http://www.ecycle.org), which educates consumers and lists collection centers by zip code. Retailers may take advantage of promotional products and training provided by the Board, including point-of-purchase flyers, posters and window clings. Radio and television public service announcements describing the program and promoting ecycle.org play throughout the state.

**Program Evolution**

SB 50 was passed in September 2004 and amended SB 20. The key changes:

- Established an initial recycling payment rate of \$0.28 per pound on the total weight of a covered electronic waste; and
- Specified that cancellation occur in CA to be eligible for payment.

The DTSC then promulgated emergency regulations that added TVs containing LCD and Plasma TVs screens of greater than four inches measured diagonally to the list of products presumed hazardous which added them to the program.

Portable DVD players have also been added by DTSC and will be covered by the Act as of July 1, 2007. DTSC recently passed regulations as required by statute, to prohibit the sale of electronic devices that are prohibited from sale in the European Union due to the presence of certain heavy metals. DTSC’s regulations are consistent with the RoHS (Restriction of Hazardous Substances) Directive in the European Union.

Going forward, the CIWMB is coordinating with DTSC to develop a fraud detection and prevention program, and to perform field audits and appropriate compliance/enforcement activities. This effort may include suspension or removal from the SB 20 program, assessing fines and/or imposing sales bans. In addition, the DTSC may perform additional testing to list other video display devices as presumed hazardous when disposed.

**Section II. Elements of an EOL Product Management System**

For analysis and comparison amongst case studies, eight components of an End-of-Life Product Management System have been identified. The Funding Mechanism, Approach and Fee/Tax Collection Point each have two or three options. The other System Elements have an unlimited number of options which are dependent on how the program was set up. The stakeholder roles and responsibilities are presented in Section III and the eight Elements of the System and how they interact are illustrated in the Section IV.

Element of System	Type		Stakeholder
<b>Funding Mechanism</b>	<i>Fee</i>	Tax	Consumers
<b>Funding Approach</b>	Voluntary	<i>Mandatory</i>	Consumers, retailers

Element of System	Type			Stakeholder
<b>Fee/Tax Collection Point</b>	Point of Manufacture	<i>Point of Sale</i>	Point of Discard	Consumers, retailers
<b>Fund Consolidation Point</b>	State Government			State: Board of Equalization
<b>Fund Oversight</b>	State Government			State: CIWMB
<b>Fund Management</b>	State Government			State: CIWMB
<b>Program Oversight</b>	State Government			State: CIWMB and DTSC
<b>Program Operations</b>	State Government, Private Sector			State: CIWMB and DTSC, consumers, producers, retailers, approved collection and recycling facilities

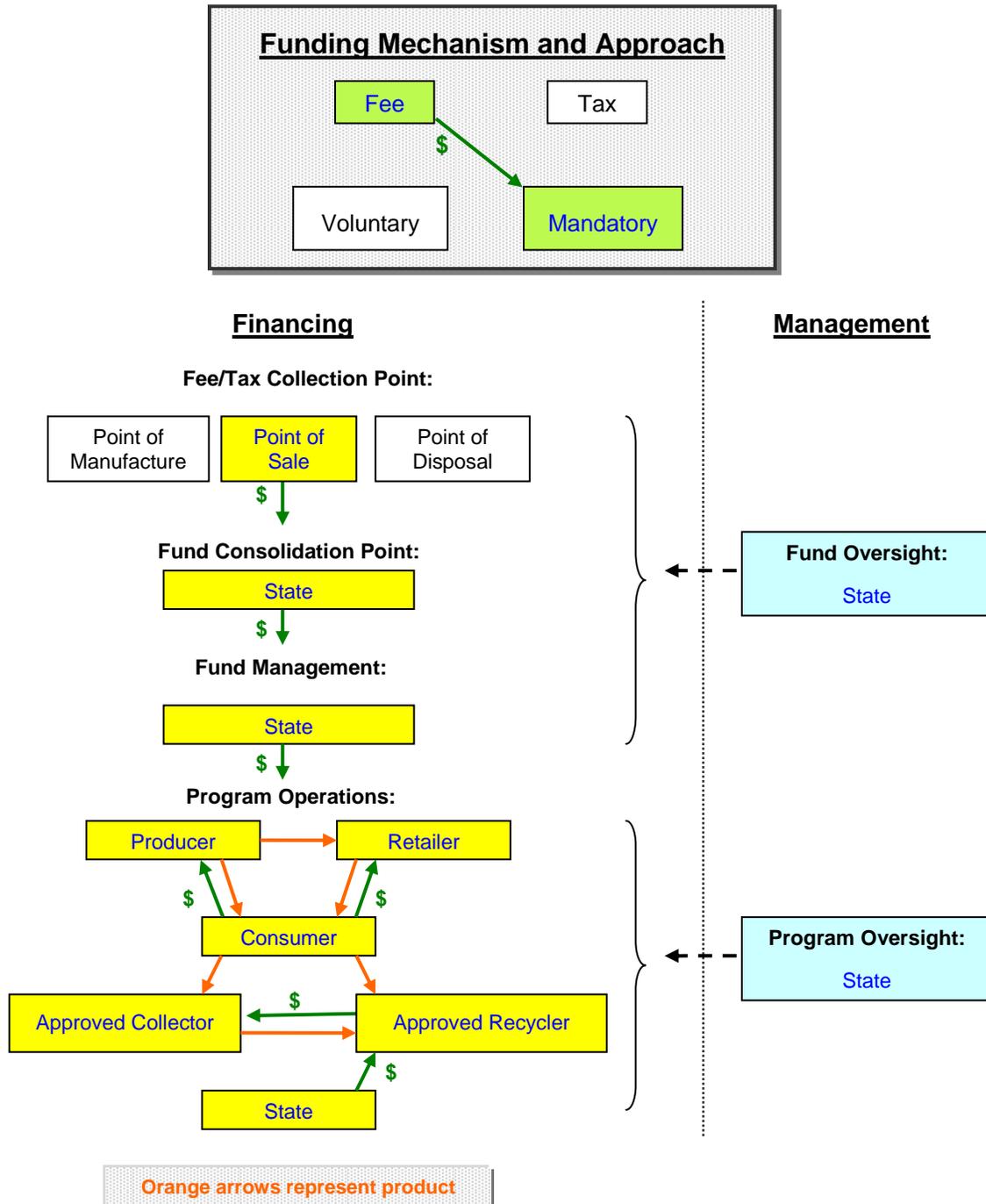
***Section III. Program Stakeholder Roles and Responsibilities***

Stakeholder	Role and Responsibility
<b>Consumer</b>	Pays ARF at point of purchase. Returns CEW to participating recyclers or collection programs.
<b>Producer</b>	Provides sales and hazardous products annual report and develops educational recycling information for consumers. Notifies retailers which products are subject to ARF. Manufacture products that are in compliance with California RoHS regulations.
<b>Retailer</b>	Sells products, collects ARF from consumers and submits quarterly payments to BOE. May provide educational recycling information for consumers.
<b>State: Board of Equalization</b>	Registers retailers to participate in fee collection program. Collects ARF from retailers and deposits revenue into the Electronic Waste Recovery and Recycling Account.
<b>State: Integrated Waste Management Board</b>	Implements the electronic waste recycling payment system and has fiduciary responsibility for the Fund. Adopted regulations for oversight of the CEW payment system. Reviews and approves, adjusts or denies claims from approved CEW recyclers, reimburses approved recyclers and sets ARF and collection/recycling reimbursement levels. Implements reporting requirements, provides public outreach/education and coordinates with DTSC on appropriate enforcement activities.
<b>State: Department of Toxic Substances Control</b>	Adopts implementing regulations to define which devices are CEWs and is responsible for all aspects of universal waste management standards, allows authorized handling and recycling of the devices. Inspects recyclers for compliance and enforces regulations, coordinates with CIWMB on appropriate enforcement activities.

<b>Stakeholder</b>	<b>Role and Responsibility</b>
<b>Approved Collectors and Recyclers</b>	Collects, recycles, and properly manages CEWs returned by consumers. Approved recyclers submit claims and receive payments from CIWMB based on weight and make payments to approved collectors for CEWs collected and transferred to the recycler. Collectors and recyclers must document the California source of the CEW and comply with all DTSC regulations and local, state, or federal laws and ordinances. The over 500 collectors include non-profits, local governments, and for-profit recyclers.

**Section IV. EOL Product Management System Diagram**

The following is a diagram of the EOL Product Management System and the stakeholders. Each tier of the diagram represents the flow of decision-making points in the System.



### ***Section V. Cost to Establish the System***

Costs to establish the program included approximately \$600,000 for 6 staff to draft regulations and establish the main database.

### ***Section VI. Cost to Operate the System***

Of the \$51 million allocated to the program in FY 05-06, approximately \$5.5 million (approximately 11%) went to administrative costs to operate the program. This includes approximately \$3.8 million to the state Board of Equalization, \$500,000 for public education, and the remainder to Cal/EPA for Program Oversight. The BOE has 55 staff that works directly on collecting the fees from the retailers at the point of sale. Program administrative costs will increase for FY 06-07 due to the addition of personnel resources at CIWMB and DTSC for program activities. Annual program revenue from fees collected is approximately \$73 million, with \$60 million in annual payments to recyclers (and via recyclers to collectors).

### ***Section VII. Contact Information***

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Website: [www.ciwmb.ca.gov/electronics](http://www.ciwmb.ca.gov/electronics) and [www.ciwmb.ca.gov/electronics/RegIssues](http://www.ciwmb.ca.gov/electronics/RegIssues)

California Department of Toxic Substances Control  
Regulatory and Program Development Branch  
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Website: [www.dtsc.ca.gov/HazardousWaste/EWaste/index.cfm](http://www.dtsc.ca.gov/HazardousWaste/EWaste/index.cfm)

California eRecycling Program  
916-341-6000  
[ewaste@calepa.gov](mailto:ewaste@calepa.gov)

Website: [www.erecycle.org](http://www.erecycle.org)

## CASE STUDY: British Columbia Paint Regulation

<b>Product Types:</b>	Architectural Paints and coatings, all paint aerosols (for home and commercial use), flammable liquids, domestic pesticides, and gasoline
<b>Effective Date:</b>	September 1994, superseded by the Recycling Regulation October 2004
<b>Location:</b>	British Columbia, Canada

### *Section I. Overview*

#### **Issue Statement**

In 1994, the British Columbia Ministry of the Environment (MOE) estimated that up to 70 percent of household hazardous waste was paint and there needed to be a safe collection and management method implemented province-wide.

As a result, the MOE passed the Post-Consumer Paint Stewardship Program Regulation (200/94) (Recycling Regulation) effective in September 1994 under the Waste Management Act. The regulation required the producers and consumers of paints to take responsibility for the management of leftover paint. The program requires paint producers to take full responsibility for the management of their products collected at HHW facilities and events. Other HHW products were regulated in a similar fashion in 1997.

#### **The Program and Funding Approach**

Under the Recycling Regulation, producers (defined as either the producer, or the owner of the trademark under which the product is sold, or an importer) may organize themselves into one or more programs, subject to meeting the regulatory requirements, e.g., province-wide collection system to develop a Stewardship Plan that obtains MOE approval. There are two separate Paint Product Stewardship programs in BC, managed by different Producer Responsibility Organizations (PROs): the Tree Marking Paint Stewardship Association (which specializes in aerosol cans at remote forestry sites) and Product Care (which is a province-wide consumer oriented program). This case study focuses on Product Care.

The Recycling Regulation requires product producers, either independently or as a member of a PRO such as Product Care, to develop Stewardship Plans to manage their products.

#### **Case Study Selected Because...**

The BC paint program has been established and refined over a 12 year period and requires producers to develop, operate, and finance 100% of the paint collection and management system.

#### Funding Mechanism:

Mandatory fee collected at Point of Manufacture and producers may recuperate fee with visible or invisible fee (eco-fee) at the Point of Sale.

#### **Performance Goal**

All paint is returned and that 100% of paint is properly managed following the hierarchy.

#### **Baseline Data**

Data collection began in 1994 and 0.3 million liters container capacity of paint were collected.

#### **Effectiveness**

The most current year data is 2004 at 5.9 million liters container capacity collected. The collection rate increased each of the 10 years of the program for which data is available.

The Stewardship Plans are submitted to the MOE for approval. Each year Product Care must also submit an Annual Report and audited financials to MOE for review.

Fees are paid to Product Care by its members who are producers, distributors and retailers of paint products. The fees are based on unit size (e.g., \$0.40 per US gallon). Product Care's members usually recover the fee through the distribution chain as a separate charge. Retailers have the option of showing the charge as a visible eco-fee which is added to the cost of each new paint container sold. The end result is to transfer the cost to manage leftover paints from the taxpayers to the consumer and producer. Producers may ask retailers to pay them to recover costs and retailers may pass costs on to customer with visible or invisible eco-fee. Collection depots may or may not be paid by the PRO.

With the fees, Product Care funds the management system outlined in the Stewardship Plan which addresses consumer education, number of products sold and collected, number of collection sites, product management, green design efforts, and program measures. Product Care operates more than 103 collection depots across the province for consumers to return paint with no EOL fee charged. The majority of depots offer paint exchange programs where usable leftover paint is offered free to the public. The final disposition of paint (latex and oil-based) collected in 2005 was reused (3.9%), recycled (61.9%) or utilized for energy recovery (34.2%). None of the paint was landfilled and all containers were recycled if possible. Product Care also does public education and promotes proper leftover paint storage to maintain the reusability of paint.

### **Program Evolution**

The program evolved by adding products to the Recycling Regulation in 1997 and on July 8, 2004 the regulations were put under a single statute governing environmental protection in British Columbia known as the Environmental Management Act (EMA). The new act incorporated provisions allowing for the development of innovative and modern regulatory schemes such as the Recycling Regulation (BC Reg.449/04). The Recycling Regulation was then enacted in October 2004 and replaced and combined the Post-Consumer Paint Stewardship Program Regulation and several other product specific regulations. The Recycling Regulation provides the statutory basis for the existing paint product and other product stewardship programs and the legal basis for new programs. The Regulation also addresses other products: Solvents and flammable liquids, pesticides, gasoline, pharmaceuticals, beverage containers, tires, and oil and oil filters and containers are defined in other schedules. The latest addition is electronic waste.

From 1994, when the first regulation was passed, to 2004 when the updated Recycling Regulation was adopted, there was a fundamental shift in the government's role in the process. The government moved away from prescribing the type of management system industry was to develop to asking the industry to design a system that is results-based, but letting the industry determine how to meet the goals. This has resulted in the MOE asking product producers to submit Stewardship Plans in accordance with the requirements of the regulation including the need to establish collection targets and report on system performance. Performance measurements can include recovery rates, the number and distribution of collection facilities, the amount of product produced versus collected, and consistency with the pollution prevention

hierarchy. In short, the provincial government has moved away from (provincial or local) government managed and taxpayer financed waste management programs to producer financed and managed systems that are performance based.

Program evolutions also include the collection system continuing to expand the number of collection depots, and increasing the number of depots that promote paint reuse on-site. Another important evolution is that because the system is “flexible”, as the management system has become more efficient, the eco-fees were reduced. In March 2005, the eco-fees dropped 14 percent for the paint sector and 47 percent for the flammables sector. The reduction of fees was due to the improvement in cost-effectiveness of the system.

## ***Section II. Elements of an EOL Product Management System***

For analysis and comparison amongst case studies, eight components of an End-of-Life Product Management System have been identified. The Funding Mechanism, Approach and Fee/Tax Collection Point each have two or three options. The other System Elements have an unlimited number of options which are dependent on how the program was designed. The stakeholder roles and responsibilities are presented in Section III and the eight Elements of the System and how they interact are illustrated in the Section IV.

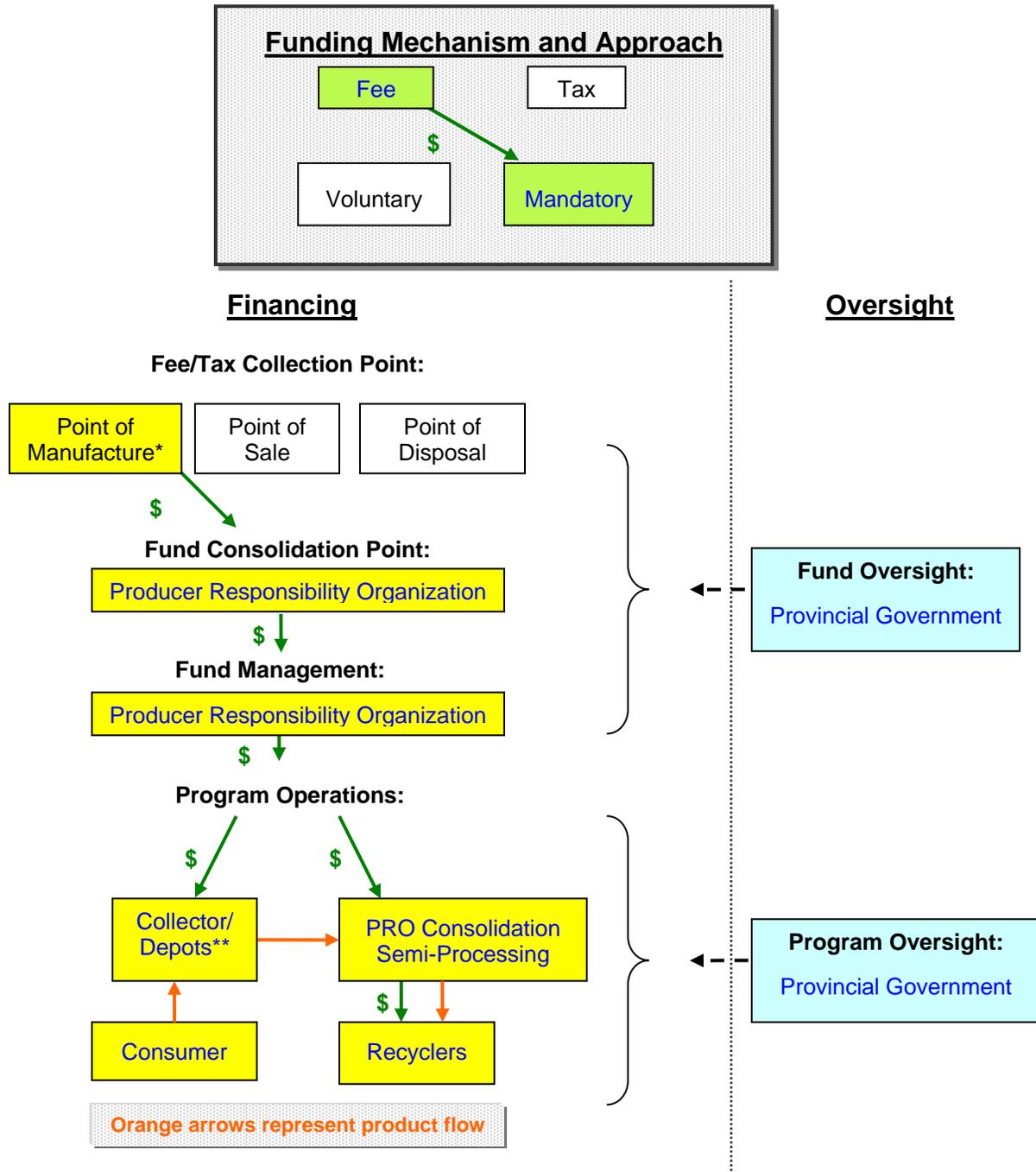
<b>Element of System</b>	<b>Type</b>		<b>Stakeholder</b>	
<b>Funding Mechanism</b>	<i>Fee</i>	Tax	Product Care	
<b>Funding Approach</b>	Voluntary	<i>Mandatory</i>	Producers	
<b>Fee/Tax Collection Point</b> <small>* Producers are allowed to pass on cost to consumers via eco-fees at POS</small>	<i>Point of Manufacture</i>	Point of Sale *	Point of Discard	Producers
<b>Fund Consolidation Point</b>	Producer Responsibility Organization		Product Care	
<b>Fund Oversight</b>	Provincial Government		British Columbia MOE	
<b>Fund Management</b>	Producer Responsibility Organization		Product Care	
<b>Program Oversight</b>	Provincial Government		British Columbia MOE	
<b>Program Operations</b>	Participating local governments, Producer Responsibility Organization, Private Sector		Collector of paint (municipal sites, beverage return depots, any company), transporter (contractors), recycler, organization of producers, British Columbia MOE	

***Section III. Program Stakeholder Roles and Responsibilities***

<b>Stakeholder</b>	<b>Role and Responsibility</b>
<b>Producer</b>	Chooses to become a member of Product Care and participates in Product Care activities including setting of the eco-fees or prepares the Stewardship Plan for their product. Pays eco-fees to Product Care.
<b>Producer Responsibility Organization</b>	Product Care fulfills the responsibilities outlined in the Framework Regulation on behalf of their members.
<b>Retailer</b>	May collect eco-fees from consumers. Responsible for some program outreach by posting visible signs with program information.
<b>Consumer</b>	Pays visible or invisible eco-fee on each liter of paint purchased. In addition, there is a disposal ban on paint thereby requiring the consumer to return the paint to the depots.
<b>Government of British Columbia - Ministry of the Environment (MOE)</b>	Adopts regulations that designate products and creates stewardship requirements. Allows individual producers or Producer Responsibility Organizations to establish programs to meet requirements. MOE reviews annual reports and audited financials and approves stewardship plans, provides assistance to producers in understanding the regulations and performs compliance and enforcement actions where necessary.
<b>Depots/Collectors</b>	Accept leftover paint from the public; promote paint reuse via swap sheds.
<b>Transporters</b>	Transports the product to the various reuse/recycling depots.
<b>Recyclers</b>	Remanufacture the paint, if possible, and residuals are properly managed.

**Section IV. EOL Product Management System Diagram**

The following is a diagram of the EOL Product Management System and the stakeholders. Each tier of the diagram represents the flow of decision-making points in the System.



\*Producers may ask retailers to pay them to recover costs and retailers may pass on to customer with visible or invisible eco-fee.

\*\*Depots may or may not be paid by the PRO.

### ***Section V. Cost to Establish the System***

The costs to establish the evolved system are unknown. The paint collection and management system started evolving from mobile events in 1994 to permanent depots over several years. Annual revenues are paid for by fees from producer members of Product Care and costs are recaptured from the consumers through eco-fees. Revenue exceeded annual cost to operate the program during first decade of program operation.

### ***Section VI. Cost to Operate the System***

In 2005, eco-fees were reduced by 14 percent in the paint sector because revenues exceeded program expenditures by \$1 million. In 2005, annual revenue was \$5.5 million and operating costs which include collection, disposal, transportation, and event advertising was \$4.2 million and administrative expenditures were \$400,000.

Despite rising volumes of paint collected, Product Care continues to improve the cost effectiveness of the program. In 2004, Product Care managed 35 percent more volume while total program costs declined by 11 percent.

### ***Section VII. Contact Information***

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## CASE STUDY: Lead-Acid Battery Recovery

<b>Product Type:</b>	Automobile Lead-Acid Batteries
<b>Effective Date:</b>	January 1, 1989 in California
<b>Location:</b>	Nationwide

### *Section I. Overview*

#### **Issue Statement**

Automobile lead-acid batteries (batteries) contain on average 17 pounds of lead, 1.5 gallons of sulfuric acid and 1.6 pounds of polypropylene (plastic). Lead is considered hazardous and improper battery disposal resulted in several Superfund sites and the auto battery industry being sued for the clean-up. In the late 1980's in response to the need to collect the lead to make new batteries and the liability issues around lead, the industry's Battery Council International (BCI) developed model legislation for states to adopt to promote the recovery of auto batteries.

The model legislation included a landfill ban, mandatory retailer-take back, and mandatory collection of \$10 deposit on purchase of a new battery if an old battery is not returned. California adopted a modified version of the model legislation in 1989 which only addressed the mandatory retail take-back with the purchase of a new battery. At the time, the bill language included the data that California generated 8 million lead-acid batteries annually, and 30 percent were not returned thereby disposing 210,000 pounds of lead, 3 million gallons of sulfuric acid, and 3.2 million pounds of polypropylene which are all hazardous waste, into the California environment. Auto-batteries were later banned from landfill disposal by the Federal government on May 8, 1993.

#### **The Program and Funding Approach**

BCI is a Producer Responsibility Organization (PRO) for the lead-acid battery industry and promotes its interests. One of the interests is recovering the batteries because of its high product value and ability to be recycled into new batteries as well as the liability issues around lead escaping into the environment.

The intent of the model legislation BCI created is to promote the recovery of batteries through the establishment of a closed loop recycling system. Specifically, the model legislation prohibits the disposal of batteries in landfills, mandates that retailers advertise their willingness to accept used batteries, mandates that suppliers collect used batteries from retailers, and recommends a deposit payment at the point of sale of at least \$10. There have been 43 states and one city that adopted the legislation as written or a modified version. Seven states require a \$5 deposit and three

#### **Case Study Selected Because...**

The high recovery rate 99% is based upon a voluntary incentive system supported by a landfill ban, mandatory retail take-back, and voluntary deposits collected by retailers. There is little government oversight.

#### Funding Mechanism:

Voluntary financing; voluntary incentive to return at the Point of Sale.

#### **Performance Goal**

To recover 100% of lead-acid batteries.

#### **Baseline Data**

Nationwide in 1988, it was estimated that 30% of used lead-acid batteries were not being recovered. This was equivalent to 2.4 million batteries in California.

#### **Effectiveness**

National recycling rate according to BCI for 1999-2003 was 99.2%.

states require at least a \$10 deposit; the deposits stay with the retailer until an old battery is returned. In addition, seven states stipulate a non-refundable fee that either goes to the retailer or state to cover administrative costs or support other environmental programs. The California program is analyzed in this case study.

The State of California adopted a modified version of the BCI model law but does not identify that a deposit be added to the sale of batteries or include a number of other provisions advocated by BCI, such as a mandate that suppliers accept used batteries back from retailers. However, it does require that retailers accept used batteries when a customer is purchasing a new one. Despite the lack of a deposit requirement, most retailers voluntarily charge a deposit as an incentive to get the batteries back and the deposit charge varies. As an example, a phone survey of Sacramento retailers in December of 2006 found that Pep Boys Auto Shop and Kragen Auto Parts charge an \$8 deposit while AutoZone charges \$10 and Napa Auto Parts charges \$7.50. If a used battery is returned at the same time as a new purchase, the deposit is waived. In addition, the deposit is returned to the consumer if a receipt showing purchase is brought in when a used battery is returned. Consumers can also take their used batteries to HHW facilities, but no money is given to the consumer.

BCI estimates that lead-acid batteries have a 99 percent recycling rate with a voluntary incentive system. The success of the recycling rate is largely a result of (a) mandating collection by retailers (b) the simple supply chain that allows suppliers to pick-up the collected products from the retailers and (c) the value of collected products to producers. The system promoted in the BCI model legislation breaks the prior linkage between lead prices and recycling because it encourages the collection of used batteries at locations from which they can be readily collected by the producers who need the lead to make more batteries.

BCI surveys the recovery rate of the batteries annually, and then calculates a five year rolling average recycling rate. The study performed in June 2005 for 1999-2003 had a recycling rate of 99.2 percent. Because the recovery is not tracked by state, there is no method of calculating each state's recycling rate.

To calculate the recovery percentage, the recycling amount is divided by the amount of battery lead available for recycling. The recycling amount is determined by surveying U.S. secondary lead smelters for the total pounds of lead recycled from batteries. The total weight of battery lead available for recycling is calculated using the following data.

- **New Battery Shipments.** BCI's statistical database is used to determine the amount of batteries produced. The database contains imports, exports and domestic shipment information as reported by BCI members. Battery producers are also surveyed to identify the amount of lead used in the production of batteries during the time period being analyzed. In addition, the average battery life is also taken into account.
- **Battery Exports.** Department of Commerce provides data.
- **Vehicle Imports and Exports.** Automotive Aftermarket Industry Association and Department of Commerce provides data.
- **Scrap Lead and Used Battery Imports and Exports.** Department of Commerce provides data.

The BCI report identifies the weights and assumptions used to determine the recycling rate.

**Program Evolution**

No fundamental program changes have occurred in California.

***Section II. Elements of an EOL Product Management System***

For analysis and comparison amongst case studies, eight components of an End-of-Life Product Management System have been identified. The Funding Mechanism, Approach and Fee/Tax Collection Point each have two or three options. The other System Elements have an unlimited number of options which are dependent on how the program was designed. The stakeholder roles and responsibilities are presented in Section III and the eight Elements of the System and how they interact are illustrated in the Section IV.

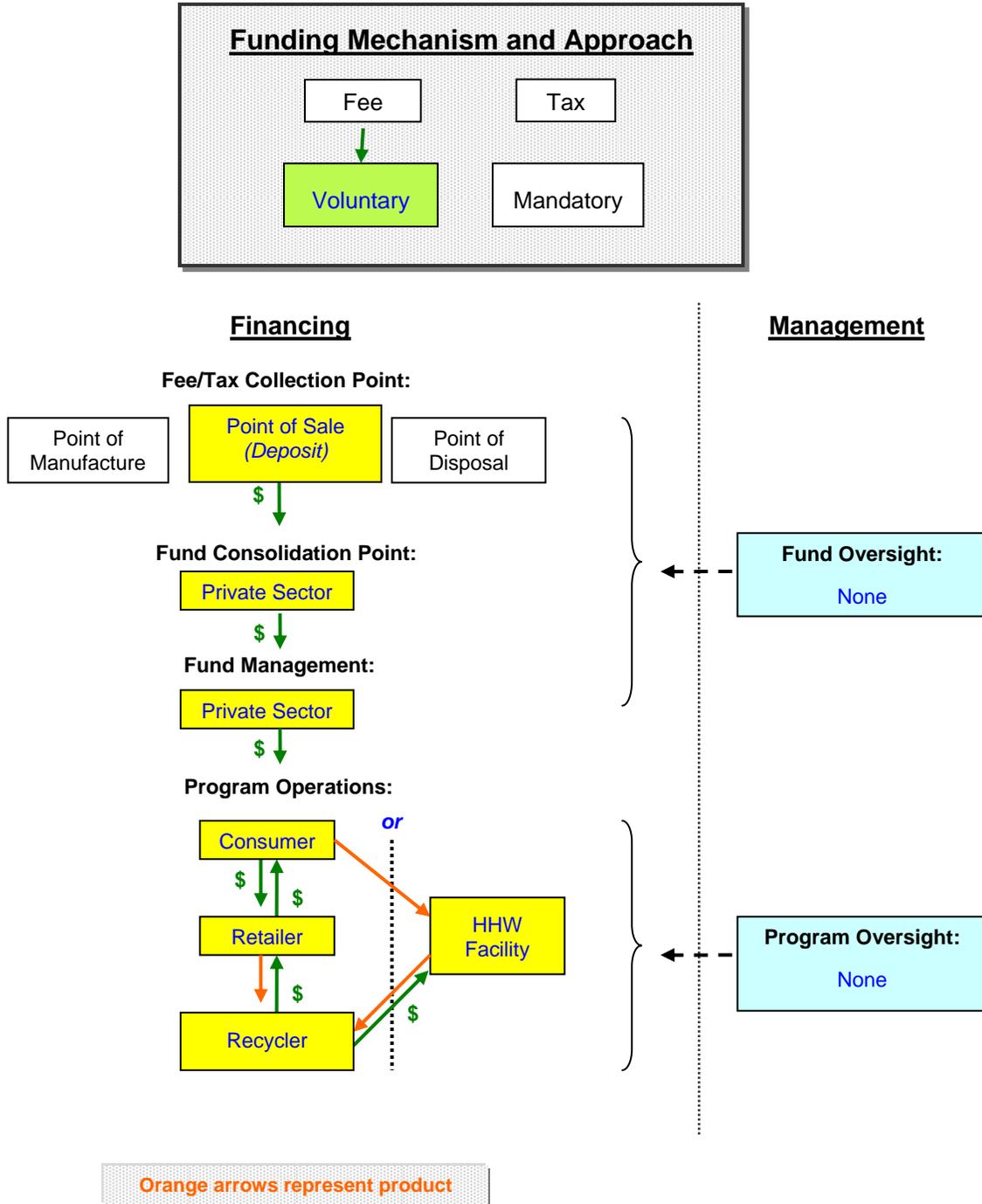
Element of System	Type			Stakeholder
<b>Funding Mechanism</b>	<i>Fee</i>	Tax		Retailer, Consumer, Producer
<b>Funding Approach</b>	<i>Voluntary</i>	<i>Mandatory</i>		Retailer, Producer
<b>Fee/Tax Collection Point</b>	Point of Manufacture	<i>Point of Sale</i>	Point of Discard	Retailer
<b>Fund Consolidation Point</b>	None			
<b>Fund Oversight</b>	None			
<b>Fund Management</b>	None			
<b>Program Oversight</b>	None			
<b>Program Operations</b>	Private Sector			Retailer, Consumer, Producer, Recycler, HHW facility

***Section III. Program Stakeholder Roles and Responsibilities***

Stakeholder	Role and Responsibility
<b>Retailer</b>	Must accept used auto batteries from the public. Some retailers charge a deposit fee when a new battery is sold and gives the money back when a used battery is returned at the same time or a consumer brings in a receipt later with the used battery showing prior purchase. System is acceptable to retailers because producers take back used batteries.
<b>Consumer</b>	May pay a deposit on auto battery purchased. Can take auto batteries back to a HHW facility or a retailer of the product.
<b>Recycler</b>	Accepts used batteries and recycles the products.
<b>HHW Facility</b>	Accepts used batteries from the public and sends the product to a recycler.

**Section IV. EOL Product Management System Diagram**

The following is a diagram of the EOL Product Management System and the stakeholders. Each tier of the diagram represents the flow of decision-making points in the System.



***Section V. Cost to Establish the System***

There were no State costs to establish the System. Costs to BCI and others to establish is unknown.

***Section VI. Cost to Operate the System***

There are no State costs to operate the System. Costs to BCI and others in the system are unknown.

***Section VII. Contact Information***

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# Recommendations

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## *System Element Recommendations*

A summary of benefits and challenges of the Element options presented in the framework is listed in Table 1 in the executive summary. It is important to note that some stakeholder representatives consider an option a benefit while another would consider the same option a challenge depending on their perspective. Therefore, the benefits and challenges listed are general and some parties may take issue with how they are presented, but it is provided to CIWMB for discussion purposes. The contractor considered all the input before finalizing the Element recommendations.

Based on the eight case studies, there does not appear to be any single or pair of Elements that “makes or breaks” a program. Instead, what has emerged is that the approach taken by government, the combination of Elements selected, design of the program, and clear roles and responsibilities identified for program participants impacts program success per the factors identified in the Methodology section.

Therefore, the following recommendations are designed to build on and complement one another for maximum achievement of core values.

### **Element 1 – Funding Mechanism:**

Six of the eight case studies utilized an invisible fee as a funding mechanism. Two case studies, California E-Waste and the Lead Acid Battery Recovery program utilized a visible fee. There was no product management System identified that is funded by taxes.

By incorporating the **fee** into the price of the product, producers internalize costs through natural market forces with the exception of fees set in law as is the case with the California Oil Recycling Enhancement Act. In addition, visible fees may increase work for retailers and with time and additional products, could result in a number of fees being listed separately on receipts. If the price point for EOL product management is low enough, the producer will absorb it internally, but if it is too high it will likely be passed on as a visible fee to the consumer to recover costs.

It was determined that **taxes** were not a viable option to fund Systems for the following reasons: 1) the CIWMB, as a government agency, is familiar with the option of imposing taxes and has historically never used that as a funding mechanism nor promoted that option, 2) taxes can be used to fund any government activity thereby increasing the chances that any money collected could be “redirected” to fund other activities, and 3) taxes do not achieve the core value to promote product stewardship. California would be better served with a fee-based System.

**Recommendation:** *Invisible Fee (See recommendations on Element No. 3)*

**Core Value:** *SD – 3 Minimize Waste; SD – 5 Producer Responsibility*

**Case Studies Utilizing Element Recommendation:** *Pesticide Container Recycling, Rechargeable Battery Recycling Corporation, Maine Thermostat, Maine E-Waste, California Oil, and British Columbia Paint (BC does also allow fee pass-through using eco-fees at POS)*

## **Element 2 – Funding Approach:**

Five case studies utilize mandatory funding approaches and three are voluntary.

Based on the case studies that utilize **voluntary** Systems, those being Pesticide Container Recycling, Rechargeable Battery Recycling Corporation, and Lead-Acid Battery Recovery, and supported by conversations with industry and government representatives in Europe, there is a risk in allowing industries to voluntarily participate in financing systems, particularly in the absence of a strong market demand for the product's components. When market demand for a product or its components is weak, industry has less of an incentive to collect and manage it properly, and the funding necessary to sustain the program wanes. This leads to "free-riders"; those producers who do not provide funding and cause those producers who do to be at a competitive disadvantage by participating. This is exemplified in the agricultural pesticide container recycling situation where the producers are requesting that US Environmental Protection Agency mandate producer participation or risk losing the program altogether due to lack of funding. As the number of producers willing to pay into the System decreases, the remaining producers find themselves at a competitive cost disadvantage to those not paying. In the case of the rechargeable battery program, the effectiveness is difficult to measure since it does not track a recovery rate. In the case of the lead-acid battery program, the reported high national recovery rate is mainly attributed to a landfill ban combined with mandatory retail take-back and a strong market for recovered lead.

Of the five **mandatory** Systems, the program operators report they are effective at collecting high volumes of products, such as the California Oil Recycling Enhancement Act collecting approximately 93 percent of available oil. Program operators also demonstrate increasing convenience to consumers and the British Columbia Paint System has increased efficiencies resulting in a reduction of fees. The two Maine programs do not have enough data yet to determine effectiveness.

**Recommendation:** *Mandatory invisible fee.*

**Core Value:** SD – 3 Minimize Waste, SD – 5 Producer Responsibility

**Case Studies Utilizing Element Recommendation:** *Maine Thermostat, Maine E-Waste, California Oil, California E-Waste, and British Columbia Paint*

## **Element 3 – Fee/Tax Collection Point:**

Six of the eight case studies utilized a Point of Manufacturer (**POM**) fee/tax collection point and two collected fees at Point of Sale (**POS**). No case studies utilized fee collection at Point of Disposal (**POD**).

In California, PRC Section 41901 allows local governments to assess fees to pay for waste management systems which are why many municipal HHW financing is at least partially paid for by fees at POD. It is not as common to find state or national financing systems that use the POD to finance product collection, but it does occur. For example, a Japanese appliance law which imposed fees collected at POD, resulted in an increase in illegal dumping and lower collection rates because when the public was charged to properly dispose of products it was seen as a disincentive to return.

Fees collected at the POS involve retailers and therefore add more stakeholders to the System than collection at POM or POD and when there are more stakeholders in the System, the administrative costs tend to increase. For example, in the California E-Waste program, three percent of the fees are retained by the approximately 28,500 retailers for their costs associated with collecting the fees at POS. They are then transferred to the Board of Equalization (BOE) which in turn deposits the money into a fund managed by CIWMB.

As a comparison between collecting fees at POM versus POS, the California oil program uses POM and requires approximately four CIWMB staff to administer the fund. This is compared to the E-Waste program collecting the fee at the POS which requires approximately 55 BOE staff to administer the fund. Although there are other program differences such as the fund for oil is approximately \$24 million versus the approximately \$80 million for E-Waste, it can be stated that generally, the cost to administer a program will increase with collection at the POS versus POM.

Funding a System from fees collected at POM eliminates the need for retailers to track fees collected and submit them to the government, PRO, or other entity consolidating the funds. Fee collection at the POM is the most streamlined way to encourage producer responsibility because the burden is on the producers to fund the collection and recycling program. POM fee collection provides direct feedback to producers on the cost to manage products at the end-of-life which supports the core value of producer responsibility. Collection at POM or POS also allow funds to be generated per unit produced versus POD which only collects funds from those products that happen to be collected.

**Recommendation:** *Fee collected at Point of Manufacture.*

**Core Value:** *SD-3 Minimize Waste; SD-5 Producer Responsibility*

**Case Studies Utilizing Element Recommendation:** *Plastic Agricultural Pesticide Containers, Rechargeable Batteries, Maine Thermostat, Maine E-Waste, and British Columbia Paint*

#### **Element 4 – Fund Consolidation Point**

Three case studies, ACRC, RBRC, and B.C. Paint, utilize **PROs** for fund consolidation; two utilize **state government**; one utilizes **producers directly**; one **utilizes producers via either PRO or directly**; and one (auto battery) has no consolidation point as each **retailer** is in charge of its own program.

That the majority of the case studies utilize either individual producers or PROs for fund consolidation highlights the ability of producers to act as the consolidation point which reduces state government involvement and expense and decreases overall administrative and program costs for government. Non-government fund consolidation points have been utilized successfully by providing individual producers the choice of managing their own product or joining a PRO who will consolidate the fees, such as in the rechargeable battery and British Columbia paint PROs. Allowing a producer to develop a system to manage its own products or join a PRO provides both flexibility and competition in the System. Both case studies where government consolidates the fee does not allow the same flexibility for producers and increases government size and associated costs to administer that function.

However, there is a downside to allowing any consolidation of funds, and that is that the direct feedback loop to the producer for the cost to manage the product at EOL is disrupted. For example, if a producer designs a product to last longer, if that producer is only responsible for their product, they will have reduced the EOL fees because they will have products returned less frequently for management. Whereas, if they join a PRO where the products returned are managed by a group, the feedback mechanism is diluted because other producers will also share in the benefit of having a longer-lasting product. This issue is discussed in a report titled “Extended Producer Responsibility and Product Design” Economic Theory and Selected Case Studies (Walls 2006) which concluded “A limited form of Design for the Environment has already taken place in response to policy in many instances: Reductions in material use and product packaging/downsizing.” Another conclusion of the study was “PROs, as they currently operate, provide very little incentive for members to engage in Design for the Environment”. Therefore, if designing the System to drive green design is desired, it is important to allow producers to have the choice of joining a PRO or managing their own products directly.

**Recommendation:** *Individual Producers or PRO, choice of which given to the producer.*

**Core Value:** *SD-5 Producer Responsibility*

**Case Studies Utilizing Element Recommendation:** *Plastic Agricultural Pesticide Containers, Rechargeable Battery Recycling Corporation, British Columbia Paint Regulation, Maine Thermostat, and Maine E-Waste*

### **Element 5 – Fund Oversight**

Three case studies utilize producers as members of PROs for fund oversight; two utilize state government; one utilizes producers directly; one utilizes producers via either PRO or directly; and one has each retailer in charge of its own program.

The case studies demonstrate that both producers and government have experienced similar challenges in fund oversight – primarily the lack of transparency outside the organization, especially when the same entity that collects the fee also oversees the fund. However, this can be addressed during program design by including requirements such as annual posting of a fund’s audited financials designed to allow for determination of cost effectiveness. This may be achieved by a combined program and financials audit or other means found acceptable to the oversight entity. For example, the British Columbia Paint Regulation limits the government role for Fund Oversight to only an annual review of audited financial reports which has been found to be adequate over the twelve years of the program. The Maine E-Waste and Thermostat Laws, which were established in the last two years, have delegated the Fund Oversight to either individual producers or PROs. While having producers perform fund oversight may offer a reduction in state involvement and overhead and give producers the opportunity to manage themselves to develop the most efficient method, government oversight offers enforceability of proper management standards/requirements, which can add another layer of accountability to the System. For maximum transparency and accountability, a party other than the one who manages the fund should provide fund oversight by requiring, at a minimum, audited financial reports from the entity managing the fund. According to Ann Pistell of the Maine Department of Environmental Protection, having only one government agency in the oversight role is most efficient.

**Recommendation:** *Fund Oversight by Government.*

**Core Value:** *SD- 8 Enforcement*

**Case Studies Utilizing Element Recommendation:** *California E-Waste, California Oil, British Columbia Paint Regulation*

### **Element 6 – Fund Management**

Five case studies identify either the individual producers or the PRO as being responsible to manage the fund and have done so successfully; two have the state government in that role, which have also been executed successfully, and one has each retailer in charge of its own program. With limited data on the latter, we know that both producers and government can successfully manage funds.

Similar to Fund Oversight, above, this then raises the issue of what is the preferred role of government in a System. Following the previous recommendations of Fund Consolidation through producer and/or PRO and limited Fund Oversight by government, placing Fund Management in the hands of producers keeps in line with increasing the responsibility of producers in the safe stewardship of their products while letting government focus on setting performance goals and keeping a level playing field for System participants.

**Recommendation:** *Fund management by individual producers or PROs, choice of which given to the producer.*

**Core Value:** *SD-5 Producer Responsibility; SD-6 Market Development*

**Case Studies Utilizing Element Recommendation:** *Plastic Agricultural Pesticide Containers, Rechargeable Batteries, Maine Thermostat, Maine E-Waste, and British Columbia Paint*

### **Element 7 – Program Oversight**

Six case studies utilize government agencies for Program Oversight; two case studies utilize PROs; and one case study on lead-acid batteries lists the private sector and government.

All Systems have been somewhat successful in the area of program oversight. However, in four of the six case studies that utilized government for Program Oversight, a key to the success is the ability of government to ensure that program goals are met and that System participants act in accordance with the program requirements. In addition, determining whether the program is meeting established goals may not be transparent and verifiable unless there is a requirement in the System to report important data on the operations; which is a traditional role for government as demonstrated in the California Used Oil and E-Waste Systems. Without quantification of program goals, successful program oversight is difficult to discern.

Again, this relates to having clear policy direction on what the desired role of government should be in the System. If the value is to have high collection rates and producer responsibility, then the government can establish the program goals, ensure they are measurable, and allow producers and other entities to operate the collection and recycling system.

**Recommendation:** *Program oversight by Government.*

**Core Value:** *SD-3 Waste Minimization; SD -8 Enforcement*

**Case Studies Utilizing Element Recommendation:** *Maine Thermostat, Maine E-Waste, California Oil, California E-Waste, British Columbia Paint, and Lead-Acid Battery*

### **Element 8 – Program Operations**

Case studies demonstrate the wide variety of stakeholders that can become part of a product's EOL management System, including consumers, retailers, recyclers, HHW facilities, producers, non-profits, schools, state government, contractors, PROs, product transporters, advertisers, and other entities that participate in specific product processes. The number of stakeholders that can be asked to participate in the collection Systems is almost unlimited and the diversity of stakeholders can increase overall stability of the System and its responsiveness to change. An increased number of collection, dismantling, reuse, and processing facilities/stakeholders can increase System efficiency through market competition.

Programs that utilize existing infrastructure and partnerships can take advantage of those networks to establish program operations efficiently (i.e., the California Used Oil Program which takes advantage of an existing network of quick lube and auto parts stores to collect used oil from the public). Those that create new systems that exist only for the program may take longer to ramp up and do not have the stability inherent in established infrastructures. The utilization of existing infrastructure can also help to provide increased convenience for consumers, taking advantage of established behavior patterns at locations that have a natural connection to the product in question (i.e., take-back of fluorescent tubes from the retail location where the customer purchases new fluorescent tubes).

While a core value of Product Stewardship would necessarily involve producers, the other key players in any given System are best determined by a stakeholder discussion which would include local government, waste haulers, MRF operators, producers, retailers, distributors, and recyclers. It is clear that PROs can design and operate collection and recycling systems themselves. Additionally, producers and the private sector players also may not have the "process" rules of government, allowing them to be more flexible and responsive to changing markets and other conditions.

**Recommendation:** *Producers will likely be a party in the operations, but they and other key stakeholders should be participants in the program design process to collect and recycle products.*

**Core Value:** *SD-5 Producer Responsibility; SD – 6 Market Development*

**Case Studies Utilizing Element Recommendation:** *All.*

### ***EOL Product Management Framework***

The recommendations are based on trends observed in the evaluation of the case studies coupled with the research done as part of the study. There is an acknowledgement that there will always be product specific considerations that need to be evaluated during System design. The System framework below allows for flexibility between PROs and individual producers for fund consolation and fund management and the Program Operations to be custom designed for each product type. In addition, because E-Waste, rechargeable batteries, and cell-phones are already collected via legislated programs, there would need to be a thoughtful discussion with the

stakeholders as to whether it is in the public's best interest to develop transition plans for each of those product types to move to this framework, to maintain the existing Systems as-is, or refine them in some way to meet the stated goals of producer responsibility which includes producer financed and producer managed programs.

Because one solution does not fit all products, this frame work is recommended as the starting point for future discussions in designing EOL Systems. The recommended System Elements are as follows:

<b><u>Element</u></b>	<b><u>Recommendation</u></b>
<b>1. Funding Mechanism:</b>	<i>Fee – invisible</i>
<b>2. Funding Approach:</b>	<i>Mandatory</i>
<b>3. Fee Collection Point:</b>	<i>Point of Manufacture</i>
<b>4. Fund Consolidation Point:</b>	<i>PRO or individual producer</i>
<b>5. Fund Oversight:</b>	<i>Government</i>
<b>6. Fund Management:</b>	<i>PRO or individual producer</i>
<b>7. Program Oversight:</b>	<i>Government</i>
<b>8. Program Operations:</b>	<i>The parties most appropriate for that product type may include consumers, retailers, producers, local government, haulers and transporters, recyclers, and other product processors</i>

### ***Research and Data Collection***

In evaluating the case-studies, the contractor identified areas of research and items for consideration that might assist the CIWMB in making future policy decisions, including:

1. Conduct more research on existing Systems for both funding and collection, including whether or not offering financial incentives to return are effective at increasing collection rates.
2. Conducting a lifecycle analysis of the management options to determine the real environmental and economic benefits and challenges of the EOL product management options prior to making policy decisions.
3. Conduct further research on EOL product management System effectiveness at stimulating green product design.
4. Conduct further research on the benefits and challenges of retail take-back efforts.
5. Continue to obtain data on Systems by working with Maine, Washington, others on developing a comparable data collection system/protocol that would enable better program analysis, evaluation and comparison.

Although it is outside the scope of this project, California could also consider researching the feasibility of using taxes as a punitive measure to discourage certain products from being utilized. For example, Belgium plans to implement a packaging tax effective on July 1, 2007 based on the amount of CO2 released during production of the product packaging. This will include the use taxes, not as a funding mechanism for a collection and management System for a product, but as a punitive tool to stop undesirable behavior by producers making products that put large amounts of greenhouse gases into the environment. California could research the possibility of using taxes as a way to either penalize producers who do not comply with requests to increase their product stewardship or green design or reward them through tax credits or other incentives.

# Considerations for Legislatively-Mandated Systems

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## *Role of Government*

The role of state government is particularly important for those Elements where transparency and protecting the public's interest is at stake: Fund Oversight and Program Oversight. However, even among Systems that utilize state government for the same purpose, such as Fund Oversight, how that function is executed varies.

For example, British Columbia Ministry of the Environment requires paint producers, either individually or through a PRO, to submit an annual report and audited financial statements (if using a visible fee which is an option for producers) to the government for review, while the State of California performs its electronic program fund oversight through a separate government agency that manages the fund and oversees the program and its operations. Traditionally in California, programs financed with advance recycling fees have burdened state government with the role of consolidating and managing funds, which may not be the most cost-effective solution.

## *Planning for Program Evolution*

Legislatively-mandated programs generally set system design parameters "in stone" which limits program responsiveness and flexibility over time. As can be seen in almost all of the case studies, programs frequently change, and flexibility should be built into any System to accommodate program evolution and a variety of service delivery models. As a collection infrastructure matures and collected product volumes increase, the efficiency of a System should also increase. In a flexible system, the fee amounts change as the collection System costs, products managed, or markets change. A System with this flexibility can more easily adapt and respond to events such as changing market forces, innovations in technology, and changes in product toxicity without requiring a cumbersome process of developing or amending legislation or beginning new stakeholder processes to accomplish the necessary EOL product management System.

For example, the Ministry of the Environment in British Columbia plays a role in Program Oversight and a limited role in Fund Oversight, thereby creating a System where the paint PRO was able to develop a flexible financing structure which allowed them to reduce fees by 14 percent on paint products in 2005. This was due to new efficiencies in the System, even during a year when volumes collected increased. In contrast, a fee reduction for the E-Waste program in California is a much more structured process.

## *Market Forces*

The influence of market forces among product types can significantly impact the level of funding required. Products with value will often be managed by the market, and government involvement may be reduced accordingly. A strong market demand for salvaged/recycled products (i.e., printer toner cartridges or precious metals) will require less government involvement to encourage diversion from the waste stream, as opposed to a product that has little, no, or even negative market value as is the case currently with used household alkaline batteries.

Competition in product processing infrastructure can also help to drive down processing costs and ultimately program costs.

For example, Switzerland instituted battery recycling with only one recycling facility, whereas France has several facilities. According to Hans Korfmacher Director Environmental External Relations for Gillette (which owns Duracell battery), what costs \$5,000 for processing in Switzerland cost \$500 in France simply due to having market competition among processors.

### ***Building Program Operations around Mutually Beneficial Partnerships***

Understanding the needs and potential benefits of partnerships can lead to creative solutions when designing a System, and there are many examples that illustrate this point.

For example, in British Columbia, the paint PRO, Product Care, partners with retailers on public education efforts, and local governments and other sites to reimburse them for collecting paint from the public. Another example from the case studies is the Agricultural Pesticide Container Program where local governments work with the Agricultural Container Recycling Corporation (ACRC) to promote the recycling events and increase collection. In California, the Take-it Back Partnership which is currently working with Pacific Gas & Electric (PG&E) to specifically test how the utility can partner with local government to increase education and collection rates of fluorescent lamps. The Good Guys electronics store, Goodwill Industries, Hewlett Packard and other groups which partnered with state and local governments in Washington to test take-back methods and together, developed a partnership that helped pass the first full producer responsibility legislation in the country for E-Waste. Additionally, water quality agencies may partner with solid/hazardous waste entities for the collection and management of mercury thermometers from the public. In partnership, the producers and agencies can leverage costs associated with outreach and collection activities. In some cases the parties also benefit from the experience that their partners may have to most efficiently utilize existing infrastructure and established management processes especially for cross-media issues.

# Implications for California

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## *Next Steps*

In recommending an EOL Product Management System Framework, the contractor recognizes that legislative change is needed to give CIWMB and the appropriate Cal/EPA agencies and Departments the authority to implement the recommendations. With that understanding, the contractor recommends CIWMB consideration of a two-phase process where Phase I efforts can begin immediately by working on a voluntarily basis with producers and other stakeholders. Phase II would require legislative efforts, specific policy direction, or would be on-going.

Per the CIWMB strategic directives, a producer managed and producer-financed System is desired. With that policy direction and the general findings from the case studies, the Contractor recommends the CIWMB consider the following efforts for Phase I implementation:

### PHASE I

1. CIWMB can immediately request that producers voluntarily begin to design the Program Operations to collect and manage their product following the hierarchy of reuse, recycling, environmentally sound management with the goal of cradle-to-cradle producer responsibility.
2. CIWMB can offer support to producers in convening stakeholders assist in the design of the Program Operations.
3. CIWMB can determine, with the input of the producers and other stakeholders, a time-frame and milestones to achieve 100 percent collection/reuse rate, or as close to it as is possible due to the existing disposal ban.
4. CIWMB can determine, with the input of producers and other stakeholders, how to establish base-lines and calculate the collection rate and collect data for each product, to measure program effectiveness.

### PHASE 2

In addition to the four primary considerations which can be implemented immediately to support producer financed and managed Systems, the contractor recommends that CIWMB consider the following for Phase II although not necessarily in this order, which could begin either concurrently with Phase I or as CIWMB staff time allows:

1. Draft legislation for a flexible regulatory framework to which products can be designated by regulation and does not require a change in law. British Columbia, Canada and several other Canadian provinces, have developed a regulatory framework that is flexible and allows the Provincial Government by regulation to add products to the regulated list without changing the law.
2. Adopt policies that provide the direction to staff clarifying the desired role of government, producers, and retailers for Systems.
3. Clearly communicate the roles of CIWMB and DTSC (which may require further legislative direction) in managing the products at EOL, including enforcement with

existing laws such as the mandatory take-back laws for rechargeable batteries and cell-phones.

4. Expansion of State Green Procurement policies to include product stewardship components to drive market-based solutions for products (as appropriate) and encourage green design. Government procurement for recycled products can help “drive” markets for many targeted products like paint. However, this concept does not apply to all products, such as mercury containing products.
5. CIWMB could support California participation as national and international solutions are discussed to manage U-Waste, E-Waste, and other hazardous products or “substances of high concern” such as carcinogens, endocrine disruptors, mutagens, etc.
6. Consider conditioning the sale of a hazardous product on demonstration of a producer participation in an effective collection system as exemplified in the British Columbia Paint and the Maine E-Waste and Thermostat case-studies.
7. Consider banning the sale of a product when the products are being banned from landfill disposal, particularly when effective, non-hazardous substitutes exist such as was done with mercury thermometers.
8. Consider adoption of enforcement policies in conjunction with adoption and implementation of the System.
9. Hosting workshops at Cal/EPA and invite government, producers, and PRO representatives from around the world who have experience with different collection and financing systems to discuss what is or is not working to help design the best program in the world here in California. California could learn from the experiences of other entities within existing Systems highlighted in this Report and more.
10. Continue to build CIWMB library on EOL product management and financing systems and ensure staff have access to national and international conferences and studies on these topics and can gain expertise in the area of what has or has not worked around the world.

# **Appendix A**

## **Elements of End of Life Management Systems**



Table 2 - Elements of Financing and Management Systems

PRODUCT TYPE	System - Yellow highlight indicates a case study was completed	Funding Mechanism		Funding Approach		Fee/Tax Collection Point			Fund Consolidation Point	Fund Oversight	Fund Management	Program Oversight	Program Operations
		Taxes	Fees	Voluntary	Mandatory	Producer	Sale (wholesale or retail)	Disposal					
Rechargeable Batteries	<b>RBRC</b>	X	X			X			Producer Responsibility Organization	Producer Responsibility Organization	Producer Responsibility Organization	Producer Responsibility Organization	Producer Responsibility Organization
Alkaline Batteries	<b>Big Green Box</b>	X	X					X	Private Company	Private Company	Private Company	Private Company	Private Company
	<b>BC Law</b>	X			X	X***			Producer Responsibility Organization	BC Government	Producer Responsibility Organization	BC Government	Producer Responsibility Organization
Paint (Latex and Oil-based)	<b>Quebec Law</b>	X			X		X		Producer Responsibility Organization	Producer Responsibility Organization	Producer Responsibility Organization	Quebec Government	Producer Responsibility Organization
	<b>CA HHW grants (all HHW product)</b>	X			X			X	State Govt. (BOE)	State Govt. (CIWMB)	State Govt. (CIWMB)	State Govt. (CIWMB)	Local Government
Thermostats	<b>Thermostat Recycling Corporation</b>	X	X			X		X	Producer Responsibility Organization	Producer Responsibility Organization	Producer Responsibility Organization	Producer Responsibility Organization	Producer Responsibility Organization
	<b>ME Law</b>	X			X	X			Producer Responsibility Organization or Producer	Producer Responsibility Organization or Producer	Producer Responsibility Organization or Producer	State Government	Private Sector
Thermometers	<b>None Found - proposed in Manitoba, not yet implemented</b>												
Fluorescent Lamps	<b>EU WEEE (Sweden)</b>	X			X	X			Producer Responsibility Organization	Producer Responsibility Organization	Producer Responsibility Organization	SWEDISH EPA	Producer Responsibility Organization
	<b>Korean WEEE</b>	X			X	X			Producer Responsibility Organization	Producer Responsibility Organization	Producer Responsibility Organization	Korean	Producer Responsibility Organization

PRODUCT TYPE	System - Yellow highlight indicates a case study was completed	Funding Mechanism		Funding Approach		Fee/Tax Collection Point			Fund Consolidation Point	Fund Oversight	Fund Management	Program Oversight	Program Operations
		Taxes	Fees	Voluntary	Mandatory	Producer	Sale (wholesale or retail)	Disposal					
Cell phones***	CA Law		X		X	X			N/A	N/A	N/A	N/A	Retailers, PRO's local governments, NGOs
Other Consumer Electronics	Japan Home Appliance Recycling Law		X		X			X	PRO	PRO	PRO	Japanese Government	PRO
Automobile Batteries	Battery Council International		X	X			X		None	None	None	State Government	Retailers, PRO, Local Government, Private Sector
Automobile Switches	National Vehicle Mercury Switch Recovery Program		X	X			X*		Stakeholders to MOU	Stakeholders to MOU	One of MOU Signatories (Auto Recyclers)	EPA and Stakeholders to the MOU	All auto dismantlers and auto shredders
Beverage Containers	CA Deposit		X		X	X	X		State Govt. (DOC)	State Govt. (DOC)	State Govt. (DOC)	State Govt. (DOC)	State Government and Private Sector
Electronics	CA Law SB 20		X		X		X		State Govt. (BOE)	State Govt. (CIWMB)	State Govt. (CIWMB)	State Govt. (CIWMB/DTSC)	CIWMB and multiple parties
	Dell Policy		X	X			X		Producer	Producer	Producer	Producer	Producer

Private Sector is defined as non-government entities such as producer, consumer, retailer, contractor, collection facility, and recycling facility.

\*Auto producers and the steel producers

\*\*RBRC also includes cell phones in collections

\*\*\* The producer may choose to recover the fee from the consumer at the POS via an "eco-fee" collected by the retailer.

PRODUCT TYPE	System - Yellow highlight indicates a case study was completed	Funding Mechanism		Funding Approach		Fee/Tax Collection Point			Fund Consolidation Point	Fund Oversight	Fund Management	Program Oversight	Program Operations
		Taxes	Fees	Voluntary	Mandatory	Producer	Sale (wholesale or retail)	Disposal					
	<b>ME Law</b>		X		X	X			Producer	Producer	Producer	State Government	State Government and Private Sector
	<b>WA Law</b>		X		X	X			Producer Responsibility Organization or Independent Producer(s)	Producer Responsibility Organization or Independent Producer(s)	Producer Responsibility Organization or Independent Producer(s)	State Government	Producers, Retailers, TBD
<b>Oil</b>	<b>CA Law</b>		X		X	X			State Government	State Government	State Government	Local and State	Retailers, Local Government, Oil distributors, recyclers State
<b>Agricultural Pesticide Containers</b>	<b>ACRC</b>		X	X				X	Producer Responsibility Organization	Producer Responsibility Organization	Producer Responsibility Organization	Producer Responsibility Organization	Producer Responsibility Organization

# Appendix B

## Stakeholder Comments



June 26, 2007

Heidi Sanborn  
R3 Consulting Group  
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Sacramento, CA 95841

Via e-mail [hsanborn@r3cgi.com](mailto:hsanborn@r3cgi.com)

**RE: Comments of the ALMR on the “Framework for Evaluating End-of-Life Product Management Systems” (Report) Draft**

Heidi,

Here are my comments on the draft report. As you can see, we feel quite strongly that lamps don't fit the model if done state-by-state.

**Page 1, First paragraph, first sentence- (also applies to Page 15, first paragraph)**

As written, this statement is somewhat misleading and not accurate with regard to the “banning of disposal and in developing funding and collection management systems” on a product by product basis. If you are referring to non-hazardous solid waste, the statement may be true for certain products that were problems, such as tires, white goods or auto batteries. This is not the case for most hazardous wastes, when making the determination, or for implementing land disposal bans. Also, any funding and collection management systems for RCRA regulated wastes have been developed privately. Remember, in order for a waste to be a Universal Waste, it first is identified as a hazardous waste. Under the hazardous waste regulations product names are not the first consideration, and emphasis has always been on the chemical constituency or specific properties of the waste, such as corrosivity, toxicity or heavy metal concentration, without regard to what product was involved.

California was also one of the first states to regulate land disposal using a toxicity characteristic method, (called the WET or TTLC or STLC test, more or less equivalent to the EPA TCLP test) This method has been used since at least 1990 and is based on leaching potential; again, without regard to product.

**Page 1, Second paragraph- (also applies to Page 15, second paragraph)**

With regard to the comment about cost increases for local jurisdictions, it is always necessary to put this into perspective. Historical usage of the infrastructure (HHWs) has always been less than 5% (according to some CIWMB and county sources, less than 1%). If costs are increasing and public participation is not, this becomes a different kind of problem to solve; one that cannot be solved by producer funding. Consumer access is the key, a fact you point out in this paragraph when you link “few convenient collection

Comments of the ALMR  
Page 2

mechanisms” with increasing costs. This is an infrastructure problem not related to the products being discussed.

**Page 3, Recommended System Elements-**

ALMR is providing a technical, market and regulatory analysis as **Attachment 1**. This was summarized in the power point presentation I made at the Board meeting on June 5th. This analysis addresses why mercury containing lighting is not conducive to the approaches that are already working or are recommended for other products being considered for EPR.

**Page 4, Role of State Government**

The first sentence makes the assumption that the state necessarily has a role in funding and program oversight. We think this assumption is subjective and we do not agree that these things have to be a state responsibility, especially for the end-of-life management of lamps. The state and CUPAs already have enforcement authority, which if exercised, would have a major role increasing the recycling rate for lamps and other UW. The most successful example of EPR and manufacturer financing is the RBRC, which operates without state government oversight. The most important thing to remember about the RBRC program is that it exists because of federal legislation that preempted states from interfering in the commerce of batteries or the end of life management of batteries.

**Page 5, last paragraph- (also applies to Page 15, SD 5)**

The statement “per the CIWMB strategic directives, a producer managed and producer-financed System is desired” reflects a position that was taken as a “one size fits all” recommendation. The System may be desired, but only where circumstances support it. This allows for the consideration of the factors we have raised about mercury lighting in Attachment 1. The directive was developed without input from either the lamp manufacturers or lamp recyclers. We have provided information that explains why the across-the-board approach will not work:

- where the products themselves have very low value, and where end-of-life costs may be equal to or greater than original product costs,
- where their components have no recovery value (or negative value),
- where the market will not support the cost of recovery,
- where there is liability associated with handling, especially where there is a high incidence of breakage, and
- where the recycling industry is heavily regulated under the RCRA-equivalent guidelines (in CA, the Standardized Permitting of the DTSC).

The whole economic model for EPR breaks down under this combination of circumstances. ALMR urges the CIWMB to amend Strategic Directive 5 to reflect that the producer mandated approaches may only be useful where the economic model supports such an EPR system. In the case of lighting there is a clear lack of infrastructure, but only for household lamps, a very small fraction of the total. For the

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Page 3

non-residential lamps there is already infrastructure in place that should not be disrupted. SD 5 should not interfere with or preempt any existing programs where the customers are already being served.

**Page 6, Phase 1-**

There is no mention of **retail participation** for a consumer take back or financing program. We think this is an important component and should not be excluded. Retail take-back is being encouraged by the DTSC, it is working everywhere it is being tried and is becoming increasingly popular for the hard to handle materials such as lamps. See Wal-Mart information for the June 23 store turn in event and the attached photos.

**Page 6, Phase 2-**

Same comment as above. No emphasis on how retail establishments can play an important role in helping consumers do the right thing with their products at end of life by offering convenient local take-back. We think CIWMB should support DTSCs requests for retail participation.

**Page 8, Table 1-**

In the discussion on the considerations and challenges of the fee, the report needs to consider the case where the fee itself would make the product price-prohibitive. This is the case for lighting, where a fee could be equal to if not greater than the cost of the product itself, making the cost of the product a deterrent to its use.

Another important factor to consider for fees is the impact of different/disparate fees in different states, affecting the commerce of both the product and the recycling of the product. (RBRC does not have this problem because states are not involved in the funding.) Contrast this with the EU, where there is already a black market for mercury lamps outside the EU to avoid the fees.

**Page 16, The last bullet at the top of the page-**

We offer the same comments as above. Another factor is the case where producers do not have the ability to pass EPR costs through the product (either visibly or invisibly) the suggested approach will not work. This becomes more and more difficult as the cost of the product goes down.

**Page 16, Last paragraph regarding the mission of the CPSC-**

The ALMR disagrees with this approach for waste lighting for all the reasons provided herein. The CPSC formed its opinions without any consultation with lamp manufacturers or recyclers.

**Page 18, First paragraph on page-**

ALMR has not seen the data provided by local governments to the DTSC, but we do not believe the lamp collection rate is 34%. We think there may be some distortions here. If

Comments of the ALMR  
Page 4

only 1-2% of the public is using the HHWs (and none of the public uses commercial recyclers directly), how can a 34% collection rate be achieved?

**Page 18, Second paragraph from the bottom of the page discussing projected annual costs for U waste management programs-**

These projections assume that all materials are turned in (when only 1% are being turned in, as you say in the last line of page 17). These projections should be put on a sliding scale related directly to public participation. If participation does not increase because people still do not want to go to the trouble or inconvenience of using HHWs, then the cost projections are way overblown. Public policy changes should not be made using grossly distorted projections.<sup>1</sup>

**Page 19, Report Structure-**

The stated purpose of the Report is to provide the CIWMB with EOL options for U Wastes. Fluorescent lamps are included in the parenthetical list of products because they are defined as UW. Yet, none of the studies or examples for product management systems included lamps, and, for all the reasons we have provided, the broad category of fluorescent lamps should not be considered in the same way as the other materials. We recommend some kind of "opt out" provision in circumstances like this.

**Page 33-38, Case study on RBRC-**

This case study would not be complete without including the major reason that this model exists. The National Mercury-Containing and Rechargeable Battery Management Act of 1996 imposed a uniform approach to the management of these materials, without any government intervention, for the lowest cost possible, and it specifically preempted states from other approaches or from creating any disparity across state borders. Another factor in this case, referred to by Mr. Korfmacher, is the value of the recoverable material being one of the market drivers for a PRO, also the case for batteries. We think in the Cost Analysis sections of all the case studies (in this case Section VI on page 38), you should indicate whether and to what extent the program budget incorporates any value for the recovered materials.

**Page 44, Maine Case Study**

As a sidebar, since you developed this case study, the state of Maine has enacted a new policy whereby the state Public Utilities Commission will pay 59¢-79¢ per light bulb to establish a retail take-back program and offer free recycling to all consumers in the state. This is a financial model not previously considered in this report, yet one which is noteworthy.

**Page 89, Bibliography**

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<sup>1</sup> See Rob D'Arcy's April, 2006 report on the Looming Fiscal Crisis for HHW, which makes the same assumptions about collection rates and program costs.

Comments of the ALMR  
Page 5

We propose that the bibliography reference “Procedures for Lampcare Lamp Waste Collections...” be deleted from the list. It has no bearing on this report. It is not referred to anywhere, and there is no relationship to EPR or consumer lamps. This reference is simply a legal/contractual notification from a UK lamp recycling company, given to its large commercial customers regarding rules for scheduling collections and compliance.

Thank you for the opportunity to comment on the draft report. I hope this information is helpful. Please let me know if there is any additional information you need.

Paul Abernathy  
Executive Director

Attachments:

1. Attachment 1- ALMR analysis of lamps vis-à-vis the EPR model
2. 2 photos of Wal-Mart collection event June 23, 2007

**Attachment 1                      Extended Producer Responsibility for spent mercury lamps.**

**Why traditional approaches may not work. Mercury lamp management is not like other products.**

---

Perceptions

- No direct connection between the huge CFL promotion programs with goal of selling 300MM new CFLs, and a return program/recycling assistance. Neither EPA Energy Star nor 18Seconds.org has made recycling explicit.
  - What is role of distributors and retailers, especially in states with no CESQG, TCLP, or Household exemptions, and consumers have compliance requirement?
  - Retailers may be the key to solutions, but no strong indication they will offer.
  - Needs to be tied to adequate collection system for consumer lamps, but EPR concepts impact all lamps.
  - See recent Minnesota SF 1085 conference amendments to engage retailers.
  - Cost of recycling, or cost to local government could become large, and remain unfunded- only if there is a big increase in public participation from the 1-4% now. How valid are assumptions that this rate will skyrocket?
  - If cost imbedded into product cost could raise price so much that customers would not buy.
- 

Differences between lamps and other items where producers are taking direct responsibility)

- Value of original product and value of materials after recycling/recovery. Recycling cost over lamp life cycle is insignificant, but recycling cost relative to new product cost is enough to affect lamp usage.
  - Regulatory and compliance costs for handlers and destination facilities.
  - Different commerce and culture for recycling HW vs. products that can either be harvested for reuse, or shredded for shipment offshore.
  - Mercury containing lighting is fragile- more than any other product being considered for EPR- imposing liability and risks for anyone who handles, transports, disposes of or breaks them. And breaking them intentionally is a hazardous waste treatment activity, highly regulated in CA.
  - Recyclers are HW TSDs and operate in highly regulated environment with oversight.
  - E-waste not specifically defined as HW nor requires management in accord with RCRA system. So far, anyone can do it with low entry barriers. Processors are not regulated by HW laws, no 3<sup>rd</sup> party oversight or performance standards.
  - So far, consumers do not have access to drop off locations that are convenient.
  - CERCLA Liability
-

**Attachment 1**

**Extended Producer Responsibility for spent mercury lamps.**

**Why traditional approaches may not work. Mercury lamp management is not like other products.**

---

Manufacturer concerns about take-back/financing

- Manufacturers do not want to “take-back” or to be engaged in the commerce of HW recycling, and recyclers already have infrastructure if consumers can get access. EU approach has hurt both manufacturers and recyclers.
  - If manufacturers pay- how to put cost in product- uniformly without state by state intervention or black markets. How can manufacturers recover costs? Margins and benefits are higher for distributors/retailers.
  - If retailer sells only one brand, how could they get paid if return program was for all brands?
  - Liability
- 

Retailer concerns about take-back

- Breakage in store or parking lot
  - Employee training
  - Costs, ability to charge a fee to customers (e.g. Staples \$10 for computer return)
  - Liability
  - Will retailers agree to participate? Will they agree to bear costs?
- 

There are only a few places in the US where this is working, although we do not know how much. Madison WI, Vermont, a few places in SF and So Cal are the only known locations where hardware stores or other retailers will take lamps back. Some with public financing and some at cost to retailer.

---

Funding options to cover recycling costs

- Public funding- Sewer or garbage fees? Public Utilities Commission via pass-through to energy users? How will local government get assurance they won't have to absorb costs? ARF adds bureaucracy into money collection and disbursement.
- Cost for consumers to ship lamps to recyclers one by one is extremely expensive. People will not go to the trouble or spend the money.
- One manufacturer considering CFL giveaway program where incandescents exchanged for CFL where incandescents will be recycled at their cost.
- One manufacturer considering giving coupon with lamp purchase, that will cover cost of recycling, but packaging and shipping costs are not covered.
- Incorporating the fee for end of life management into the price of the product is not practical for lamps because it could double the price

If cost will have to be borne by the lamp user, how to resolve problem of increasing the price until it becomes prohibitive and a disincentive to their use. How real is this concern?

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Unsolved issues:

- The dilemma remains how to make this easy and accessible for homeowners. Convenience for a drop off location is critical.
- 

HHW collection centers' participation is extremely low; 1-4%. We don't expect increased CFL use to change that. Solid waste industry has, so far, not wanted to create diversion programs for their clients.

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June 26, 2007

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RE: Stakeholder Comments on Contractor's Report to the Board: *Framework for Evaluating End-of-Life Management Systems in California*

Dear Ms. Sanborn:

As a stakeholder in the development of a statewide system for end-of-life management of Universal Waste in California, I am pleased to provide comment on your above referenced draft report (Report) to the California Integrated Waste Management Board (CIWMB). Per your request, these comments are focused on two primary areas of the report. Additionally, general comments on report content have been included. This letter presents comments in the following order:

- (1) Whether you believe the Model Framework (i.e. 8 Elements) is a useful tool to evaluate End-of-Life product management systems or if you have suggested improvements;
- (2) Comments on the recommended framework to develop EOL management systems for U-wastes and paint; and
- (3) Report content.

**(1) Comments on “Whether you believe the Model Framework (i.e. 8 Elements) is a useful tool to evaluate End-of-Life product management systems or if you have suggested improvements”**

The model framework presented in the Report is a useful tool to evaluate end-of-life product management systems (Systems).

- The System is comprehensive and based on the most current and best available case studies.
- Research was not limited to end-of-life management systems in the United States as it includes examples from Canada and other references to European programs.
- Research was not limited to universal waste and paint; it included multiple System methods and products
- The System encompasses the perspective of and includes participation from multiple stakeholders

The primary shortcoming of the model System is the lack of attention on engaging and enhancing consumer participation. The System is ineffective if consumers are not returning the products at end-of-life regardless of the level of producer participation. Consumer related considerations to be incorporated into the model as a 9<sup>th</sup> Element include:

- Education
- Outreach
- Ease of use (convenience)
- Financial impact to consumer

**(2) Comments on the recommended framework to develop EOL management systems for U-wastes and paint**

**Element 1 – Funding Mechanism: Support of Fee**

- A product-specific fee will help ensure that funds are properly allocated to EOL management of the intended product.
- It is important to acknowledge the challenges faced by manufacturers in meeting numerous state and local level requirements relating to EOL management. Consider focus on a national System in order to ease the burden to manufacturers.

**Element 2 – Funding Approach: Support of Mandatory Participation**

- A mandatory fee system is imperative in reducing the burden of free riders.
- Competition and market forces are expected to play a significant role in a successful system. A mandatory fee will, in essence, level the playing field and foster competitive forces.
- A voluntary fee will weaken stakeholder support of the System and jeopardize the long-term stability of the System.
- To further underscore the importance of mandated participation, please refer to the attached letter dated June 18, 2007, written by The Pesticide Stewardship Alliance addressed to the United States Environmental Protection Agency regarding the request to reconsider container rule change and cost-out the impact of ACRC failure. The letter documents the necessity of mandated participation in the Ag Container Recycling Council (ACRC), a producer responsibility organization (PRO), by way of federal regulation. For reasons document in the letter, the author contents that “The ACRC will not survive the next two years without mandatory container recycling.”

**Element 3 – Fee/Tax Collection Point: Support of Point of Manufacture**

- In alignment with the CIWMB’s Strategic Directives, end of life management should be considered in the total cost of a product, not an additional expense post manufacture and sale.
- Consumers are an integral stakeholder in any System design and a successful System depends upon consumer participation. A point of manufacture (POM) fee is the least confusing for consumers because it is essentially invisible to them. Unlike a point of sale (POS) or point of disposal (POD) fee assessment, a POM is viewed as “free” recycling by consumers. The POM is more likely to encourage consumer participation in the System.
- Most household hazardous waste (HHW) programs in the State of California are available to residents at no charge at the time of disposal (point of disposal). Still, the participation rate for household hazardous waste collection programs rarely exceeds ten percent (10%). In fact, most jurisdictions report only 3-5% of households participate in the local HHW program. A POD fee will discourage consumer participation in the System and may prove to increase illegal disposal through the municipal solid waste system or even worse, abandoned waste.

- The POM fee must be structured in a way that ensures transparency. While the Report emphasizes the importance of a flexible System that allows fees to be adjusted based on System efficiencies over time, the establishment, collection and tracking of fees must be a transparent process with enforceable criteria and significant penalties for non-compliance.
- An added benefit to POS fee is the element of consumer awareness. When the fee is itemized on the sales receipt, a consumer is more likely to notice the fee and consider disposal options at the time of purchase or replacement. The Report should consider a mandatory consumer education requirement as a component of the System.

**Element 4- Fund Consolidation Point: (Partial Support of Recommendation) Support Single PRO**

- A single PRO with a single outreach message, consistent branding, and standard procedure for consumers to utilize the system is the most user-friendly approach from the consumer's perspective. This consistency and ease of use is imperative in maximizing total System participation.
- The flexibility to allow individual producers to develop their own fund consolidation point in order to spur competitive forces must be balanced with the benefit of a single PRO and ease of consumer use.

**Element 5- Fund Oversight: Support of Government Oversight**

- Oversight by a government agency should be established in a way that ensures accountability of System participants and includes an enforcement mechanism.
- To reduce administrative burden and costs, reporting requirements should be streamline and standardized.

**Element 6- Fund Management: Support of Fund Management by Individual Producers or PROs; Choice of Which Given to the Producer**

- The System must require annual review of the amount of disbursement based upon factors detailed in the initial System design.
- Timeliness of disbursement will influence stakeholder support of the System. Stakeholders will embrace the System more readily when they are assured prompt disbursement of funds.

**Element 7- Program Oversight: Support of Oversight by Government**

- The long terms stability of a System that addresses universal waste and paint (both latex and oil based) is dependent upon: transparency of the system, flexibility allowing Stakeholders to make competitive decisions, allow for ability to adjust fee collection and disbursement, and strict enforcement. A System that includes oversight by Government is most likely to achieve these goals.
- Should the Board choose oversight by the Private Sector, authority for enforcement including significant penalties for non-compliance and an element of checks-and-balances must be incorporated into the System.

**Element 8- Program Operations: Support Multi-Stakeholder System Design Process**

- A considerable infrastructure for the collection and recycling of universal waste and paint already exists in the State of California: solid waste haulers, HHW collection programs, retail supply chain, in-state recycling facilities. Use of the existing infrastructure (with some improvements specifically related to collection and recycling of universal waste and paint) will reinforce the importance of proper EOL management for all household hazardous waste by increasing the utilization of existing HHW related programs. For example, the increased attention and education on universal waste and paint as provided for in the System will lead consumer to single point of collection for their household hazardous waste. Residents will bring their pesticides and cleaners along with U-Waste and paint therefore increasing the amount of the higher hazard material diverted from municipal solid waste landfills. In short, this type of "one-stop shopping" is the most convenient for the consumer and therefore is most likely to maximize consumer participation. Without consumer participation, the System will fail.
- Because of the high number of stakeholders involved, a collaborative process is likely to be time-consuming and cumbersome without the proper mediation and guidelines. Stakeholder input is important to the ultimate success in design but cannot be allowed to stall the process.

**Next Steps, Phase I**

The four steps outlined in Phase I represent a comprehensive approach to filling in the details of the skeleton framework presented in the eight Elements. The aspect of collaboration in each of the four items is crucial to the success of the chosen System. Specific comments related to individual items are detailed below.

*Item 3. CIWMB determine, with the input of the producers and other stakeholders, a time-frame to achieve 100 percent collection/reuse rate, or as close to it as is possible due to the existing disposal ban.*

- The time-frame should include benchmarks to measure progress (i.e. benchmarks for 50, 75, 90 percent collection/reuse)
- The time-frame should include penalty for non-compliance

*Item 4. CIWMB to determine, with the input of producers and other stakeholders, how to establish base-lines and calculate the collection rate and collect data for each product.*

- The establishment of base line is a crucial first step in the development of a successful System. The base line data that serves as the System's benchmarks will be used to monitor the successes or shortcomings for the duration of the System. Furthermore, involving the primary stakeholders in this developmental process and securing agreement on the base-line data points among the primary stakeholders will strengthen their vested interest in the resulting System.

- As the number of stakeholders increases, so does the potential for inconsistency in data collection and evaluation. A standard method of data collection and reporting is essential to ensure the accuracy and reliability System evaluation. Additionally, data analysis must be conducted by a single organization.

#### Next Steps, Phase II

Phase II steps should include consideration of:

- Support of a national System as the California Integrated Waste Management Board has been a primary stakeholder and participant in the Product Stewardship Institute's initiatives including the Paint Product Stewardship Initiative (PPSI) which is developing a model for an industry-funded national system for the management of post-consumer paint; and
- A clearly defined process and timeline for System evaluation including goals, benchmarks, timelines and procedures for data collection and evaluation.

### (3) Report content

#### Glossary of terms

- Add a glossary of terms that includes definitions for all the acronyms used throughout the Report as well as definitions for key words.
- A glossary of terms will improve the readability of the Report by providing audience with easy access to reference important terms throughout the Report.

#### Introduction, Background, Paint (page 18)

The Report states, "In addition to the landfill ban for U-Waste, latex paint **may be hazardous** in California (based on presumptive hazardous nature or on generator knowledge)...".

- Change language to "...latex paint is hazardous in California..."
- It is my understanding that latex paint is a hazardous waste in the State of California pursuant to California waste code 291- latex waste or 612- household hazardous waste.
- Excerpts from the CIWMB's fact sheet, publication #331-97-016 (attached) states:
  - "In California, leftover latex or oil based paint is considered a hazardous waste and must be managed appropriately."
  - "Although water-based (latex) paint is less harmful to the environment and your health than oil-based paint, its ingredients are hazardous."
  - "In California, it is illegal to dispose of latex paint in the trash or down storm drains or sewer drains. According to the California Department of Toxic Substances Control (DTSC), it is also illegal to air dry or mix small amounts of latex paint with any substance for the purpose of solidifying it and disposing of it because this practice is considered "treatment of a hazardous waste.""

Next Steps, Phase II language is too soft.

- Phrases such as “**Perhaps** with further legislation...”, “Government procurement for recycled products **can** help...”, “CIWMB **could** support...”, “It **may be** beneficial...”, “Adoption of enforcement policies **could be** considered...” are more effective when presented in a more direct fashion.
- The Report’s recommendations are based on extensive research and merit a more confident tone.

Thank you for the opportunity to provide comment during this critical stage of System development. Should you have any questions or concerns regarding these comments, please do not hesitate to contact me via email at [bruning.susan@cleanharbors.com](mailto:bruning.susan@cleanharbors.com) or via cellular phone at (805) 680-1092.

Sincerely,



Sue Bruning  
Director, Product Line Management  
*Household Hazardous Waste Services*  
Clean Harbors Environmental Services

**ATTACHMENTS:**

Letter written by The Pesticide Stewardship Alliance addressed to the United States Environmental Protection Agency regarding the request to reconsider container rule change and cost-out the impact of ACRC failure (June 18, 2007)

CIWMB Fact Sheet, Publication # 331-97-016, “Latex Paint-Hazards and Solutions for Disposal”



The Pesticide Stewardship Alliance

11327 Gravois Road  
Suite 201  
St. Louis, Missouri 63126

June 18, 2007

Stephen L. Johnson, Administrator  
U.S. Environmental Protection Agency  
Ariel Rios Building  
1200 Pennsylvania Ave., NW  
Mail Code 1101A  
Washington, DC 20460

Re: Request to Reconsider Container Rule Change and Cost-Out the Impact of ACRC Failure

Dear Administrator Johnson:

It has come to the attention of The Pesticide Stewardship Alliance (TPSA) that the EPA decided to release FIFRA 19 (h) aka "Container Rule" as an advance notice of proposed rules last week. This decision couldn't come at a worse time for the pesticide stewardship sector, Ag Container Recycling Council (ACRC), and the thousands of farmers and agri-chemical dealers who want to do the right thing and triple rinse containers for recycling.

The purpose of this letter is to draw EPA's attention to one simple premise: **This important stewardship service will not survive a protracted delay in Container Rule implementation.** The backbone of container recycling in America is the ACRC. If it is further undermined or diminished in anyway by the lack of federal action on mandatory recycling or the continuing loss of ACRC member companies, the ACRC and its entire infrastructure will fade away. What facts support this contention?

- No state or registrant has successfully deployed a pesticide container recycling system in the absence of ACRC support. Only states with active ACRC programs are recycling. The ACRC has collected nearly 90 million pounds of plastic since 1992.
- Owing to the fragile condition of state budgets, there is virtually no chance that state lead agencies (SLAs) would step forward to sponsor plastic container recycling programs, especially where no authority and funds currently exists.

- Even though ASABE/ANSI adopted a container recycling standard in 2006, it should be believed that more than a handful of registrants might actually create their own pesticide container recycling programs if the ACRS should fail. Historical observations clearly support the belief that most registrants see container recycling as an extra cost and non-essential service to the agricultural sector. The fact should not be lost that the ACRC was created in large measure because of the possible intervention of the federal government in the early 1990s or individual state programs or deposit schemes, which would be very cumbersome and expensive.

Since 2005, registrants, SLAs, and the agricultural sector have been awaiting final federal action on mandatory container recycling. Until last week, all signals given by the EPA working with CropLife America and RISE had been positive on the development and early implementation of mandatory container recycling. Last week's action sent a clear signal that the federal government no longer sees container recycling as a valuable service to the agricultural sector and environment. Registrants included to take a short term view on last week's decision now have a "green light" to withdraw from the ACRC...and that, as mentioned above, will lead to ACRC failure.

TPSA believes that the real costs of ACRC failure were not considered by the EPA and that no decision on this matter can be final until the real impacts of a failed national system are considered. **The ACRC will not survive the next two years without mandatory container recycling.** Hence to fairly assess a delay in the proposed rule through last week's action, immediate consideration must be given to a failed national system where containers will no longer be collected at the local level, states will be unable to intervene, few registrants will begin their own recycling programs, container burning will increase, and, in general, America will return to an era that will look far more like the 1980s and the 1970s. Farmers and agri-chemical dealers will be left to their own devices to solve stewardship problems that once had an easy answer.

America has a system that works...it is called the ACRC. Before pulling the plug on it by putting the Container Rule on a "slow track", **we hereby request that the EPA immediately consider the real costs and consequences of a failed national system.** We are convinced that a full and accurate analysis will reveal that the ACRC offers clear and unmistakable benefits to agriculture and the environment.

Steve, because of the urgency of this matter, we are seeking a teleconference call with you or someone on your staff over the next ten days. We will contact your office late during the week of June 18th to ascertain what kind of teleconference meeting can be arranged. Perhaps a meeting with all major players can be accommodated at the same time. We greatly appreciate your attention to this matter.

Sincerely,

Carol Ramsay  
President, TPSA  
Washington State University  
Phone: 509-335-9222

Don Bradley  
Board Chair, TPSA  
Murray Equipment, Inc.  
Phone: 800-348-4753

# Latex Paint— Hazards and Solutions for Disposal

## **Introduction**

The average household stockpiles 1 to 3 gallons of paint per year. In California, leftover latex or oil based paint is considered a hazardous waste and must be managed appropriately.

This fact sheet defines latex paint and its potential effects on the environment and health, and presents practical ideas on how to use and handle it properly.

## **What is Latex Paint?**

Latex paint is a water-based coating containing resins, solvents, pigments, and additives. It is durable, easy to apply, cleans up with soap and water, and it has replaced oil-based (solvent-based) paint in 85 percent of painting projects in California. In fact, over 58 million gallons of latex paint are sold annually statewide, making it the most frequently used paint product on the market. Although water-based (latex) paint is less harmful to the environment and your health than oil-based paint, its ingredients are hazardous. That's why it must be managed as a hazardous material.

## **Environmental Effects**

Latex paint can be highly toxic to the environment. It harms fish and wildlife, and contaminates the food chain if poured down a storm drain. It can also pollute groundwater if dumped on the ground. While it may be acceptable to clean paint applicators in the sink, pouring excess paint down the drain disrupts microbes and causes sewage treatment to be less effective and more costly. If thrown into the trash it can contaminate other recyclable materials, thus wasting valuable resources.

## **Health Effects**

Latex paint can also have adverse effects on your health if not used properly. If used in closed areas, its chemical components can irritate eyes, skin, and lungs and cause headaches and nausea. It can also contribute to respiratory problems, muscle weakness, and liver and kidney damage.

## **What Can I Do?**

As part of your preparation for a home painting project, you should consider the following tips for reducing, using, recycling, and disposing of latex paint.

**Buy only what you need.** Calculate and buy the amount of paint you need for a project. Many retailers provide this kind of help as a service to their customers.

In addition, some retailers take back unused, unopened latex paint that they've sold to you. Check with your local retailer to see if they take paint back and under what conditions.

**Use it properly.** To protect your health, always apply latex paint in well-ventilated areas and wear a protective face mask and goggles that completely cover your eyes.

This is especially important when spray painting.

**Store it properly.** Store paint cans upside down with the lids on securely to keep it fresh until you need it again and make it more recyclable. Avoid storing it at extreme temperatures.

**Use up leftover paint.** The best way to get rid of leftover latex paint from one household project is to use it up on another. If you cannot use the paint, give it away in its original container to friends, neighbors, or community groups.

**Reuse your paint applicators.** Clean brushes and rollers in sinks or other facilities where wastewater flows directly into sewers for treatment. Do not clean applicators in the street or other places where the wastewater could flow into storm drains that in turn flow into local streams and rivers. Also, do not clean them in the backyard where paint may contaminate soils.

**Recycle your leftover paint.** Contact your local environmental health, solid waste, or public works department to find out about household hazardous waste (HHW) collection programs. These programs have been set up to collect, reuse, and recycle leftover paint from households. See "For More Information" for how to find locations of HHW collection programs.

**Use paint exchange programs.** Take advantage of HHW waste exchange programs sponsored by local government. These programs generally accept usable but unwanted paint and give it away to any individual that can use it. The paint is unprocessed, but still usable, and in its original containers.

**Use recycled latex paint.** Some leftover paint that has been collected through local HHW collection programs is sorted, consolidated, and strained, and then sent to paint manufacturers for reprocessing into a quality paint product. Through your local programs you may be able to get recycled paint free or at a low cost.

(Note: Recycled latex paint is discussed in detail in another IWMB fact sheet. See "For More Information.")

**Use proper disposal methods.** In California, it is illegal to dispose of latex paint in the trash or down storm drains or sewer drains. According to the California Department of Toxic Substances Control (DTSC),\* it is also illegal to air dry or mix small amounts of latex paint with any substance for the purpose of solidifying it and disposing of it because this practice is considered "treatment of a hazardous waste."

However, if latex paint has naturally dried out, it may be disposed of in the trash.

Although empty containers can be thrown in the trash, your local solid waste or HHW collection programs may be collecting the containers for recycling. A container is considered "empty" if no paint pours out when it is held upside down, any paint remaining in the container cannot be removed by chipping or scraping, and no propellant is dispensed when the pressure-sensitive valve is pressed down on an aerosol can.

\*Note: The IWMB provides information on household hazardous waste, including paint, to help keep it out of the solid waste stream. Hazardous waste management in California is regulated by DTSC, one of our sister agencies under Cal/EPA.

### **For More Information**

To find out more about recycling paint, buying recycled paint, or recycling empty paint containers, including aerosol spray cans, call the Cal/EPA Recycling Hotline at **1-800-CLEAN-UP**, or visit their Web site at **www.1800cleanup.org**.

#### **Publications**

The IWMB has published two other paint-related publications:

*Sampling, Testing, and Evaluation of Recyclable and Recycled Latex Paint: Final Report.* A 137-page report documents a Cal Poly, San Luis Obispo study that evaluated the use of latex paint collected from HHW collection programs as raw material for manufacturing of high quality recycled latex paint. December 1995, Pub. # 331-95-011.

*Recycled Latex Paint.* Two-page overview of reusable and recycled latex paint available in California. August 1997, Pub. #431-97-034.

Other household hazardous waste publications are also available, some in Spanish as well as English.

You may order these and other publications by:

**1. Phone:** CIWMB Publications Clearinghouse at 1-800-CA-WASTE (CA only) or (916) 341-6300.

**2. Internet:** Search for publications, download them, and/or send an electronic order to CIWMB through our Internet Web site at **www.ciwmb.ca.gov/Publications/**.

#### **Grants**

For more information on HHW and Used Oil grants call (916) 341-6692 or visit our Web site at **www.ciwmb.ca.gov/Grants/**.

#### **Hazardous Waste Management**

Contact the nearest DTSC field office duty officer for more information on hazardous waste management practices, and latex and oil-based paint regulations in California. To locate the nearest field office, check the Web site at **www.dtsc.ca.gov/eadutloff.htm** or call DTSC's main information number: (916) 324-1826.

**CHAIR** — BOB PICKARD, MARIPOSA COUNTY

**VICE CHAIR** — LAVADA ERICKSON, SISKIYOU COUNTY

**EXECUTIVE DIRECTOR** — GREG NORTON



**PROGRAM MANAGER** — MARY PITTO

**TECHNICAL ADVISORY GROUP CHAIR** — RANDY AKANA,  
SISKIYOU COUNTY

**TAG VICE CHAIR** — BILL MANNEL, BUTTE COUNTY

June 26, 2007

Heidi Sanborn  
R3 Consulting Group  
4811 Chippendale Drive, Suite 708  
Sacramento, CA 95841

RE: Review of R3's Report Titled "Framework for Evaluating End-of-Life Product Management Systems"

Dear Ms. Sanborn:

The Rural Counties Environmental Services Joint Powers Authority (ESJPA) is an association of 22 rural California counties created in 1993 to assist member jurisdictions in their ongoing efforts to implement environmentally sound waste management programs and to represent the interests of rural local government on key regulatory and legislative policy issues related to solid waste management. On behalf of its member counties, the ESJPA appreciates this opportunity to provide you with stakeholder comments on R3's Report titled "Framework for Evaluating End-of-Life Product Management Systems".

While the subject report may have been specifically designed to address various types of product management systems for "universal waste", it is our understanding that the report recommendations are also intended to provide a more generalized framework for the evaluation of end-of-life management systems for latex paint, for oil-based paints, and, also for other hazardous and non-hazardous products. The following comments are offered from this perspective.

It has been well documented that rural counties within California are disproportionately impacted by "premature landfill bans" that are preemptorily imposed without the prior establishment of an effective product recovery system. In rural counties, the environmental harm associated with these "premature landfill bans" is significant and the financial impact of such bans on local government can be crippling. Within rural counties, the unit costs for collecting and transporting "banned materials" are many times higher than comparable costs in more populous areas of the State. Rural jurisdictions simply do not have the financial resources to absorb these costs and, without subsidies, high gate fees (which must be sufficient to offset collection and handling costs) inevitably lead to the illegal disposal of hazardous materials on public lands and the accumulation of discarded materials on private property. When CRTs were first banned from landfill disposal without an adequate statewide plan for recovery, a high number of discarded computer monitors and television sets were dumped in some of the most pristine areas of our rural counties, polluting streams and compromising the scenic beauty of precious natural resources.

Based on this recent experience in dealing with CRTs and in consideration of our ongoing efforts to address “universal waste” and “waste paint” issues in an environmentally sound manner, the ESJPA supports advance statewide planning for the identification, collection, and recovery of all materials and products prior to any ban being placed on landfill disposal. The recent ban on the landfill disposal of all universal wastes and the continuing ban on paint disposal in landfills have been put in place without the establishment of effective product recovery systems. Given this situation, the ESJPA strongly supports the report recommendations that call for immediate implementation of mandatory producer-based programs designed to offset local government costs for material collection and handling and to increase product recovery rates. Local governments, as the primary collector of universal waste and waste paint, have been hopeful that voluntary efforts by industry would be sufficient to meet our programmatic and financial needs. However, after more than four years of dealing with the high costs of universal waste collection and handling, little or no significant progress has been made for most product types. Existing programs are not sustainable and they do not provide the infrastructure needed to support increased rates of product recovery.

More broadly, the ESJPA believes that the “model framework” as presented in the subject report provides a necessary and useful tool that will generally help to ensure the comprehensive development of workable systems for advance statewide planning for other material and product types. It is clear that considerable effort and thoughtful analysis went into the preparation of this report and the ESJPA is hopeful that the recommendations being put forward will receive positive consideration and provide a forum for continued input and discussion with local government and other key stakeholders.

We believe that the eight system “elements” identified in the report provide a useful and logical mechanism for evaluating alternative product management systems. From a local government perspective, however, we believe that a more detailed discussion and analysis of “Element No. 8—Program Operations” is necessary to further develop the model for specific material types and to provide a basis upon which to more fully evaluate the financial and operational implications of any proposed system on local government. For rural counties, with a widely dispersed and limited population base, the unit costs for material collection, transport, and public outreach can be extremely high relative to urban areas of the State. These costs need to be quantified and methods of cost recovery developed prior to program implementation.

While most rural counties would generally support a system that placed primary responsibility on the producer/retailer to implement a “take-back” program, the ESJPA recognizes that this is not always feasible depending on material/product type and other factors. If local government ends up being the primary entity responsible for collection of certain products or material types, the full costs for such operations need to be realistically addressed “upfront” so that that consumers in rural counties do not end up “paying twice” for product recovery—first, through some type of advance disposal fee and, then again, for increased local gate fees that would be needed to offset any funding shortfall. If, on the other hand, producers or retailers assume a primary role for material collection programs, it is important that local government be provided access to these programs since, regardless of the collection model that is being followed, local rural governments (whether by design or not) inevitably end up being the “collector of last resort” for many businesses and consumers.

To address the need for a more detailed study of alternative “Program Operations”, one of our member counties has suggested that Element No. 8 be broken down into the following operational subcategories:

- 8(a): Receipt from customers (whether intact, in parts, contaminated)
- 8(b): Processing/shipping methods for intact items
- 8(c): Processing/shipping methods for parts and contaminated or co-mingled items
- 8(d): Consolidation and material recovery processes
- 8(e): Marketing of recovered products/processing of residuals
- 8(f): Programmatic issues such as “green design”, “green chemistry”, re-design outreach and training; minimum content requirements

This further breakdown of the model is suggested in recognition of the fact that each of the identified operational aspects of system development will likely differ depending on material and product type and no one entity or single mix of entities will be appropriate for all itemized functions. Using fluorescent tubes as an example, local government currently has responsibility for the first three subcategories—receipt, processing, and shipping. Yet the central issues associated with the last three subcategories are clearly outside the reach of local government even though they are essential to overall system efficiencies. In this case, the failure to successfully implement all aspects of “Program Operations” has placed an undue financial and resource burden on local government.

The report appropriately recognizes the need to “take into account issues related to scale when applying the lesson learned from other programs to California”. Cited issues include size, population, and the diversity of California. In raising this caution, the report was addressing the differences between California and other areas that were included in various case studies. The ESJPA believes that this “caution” needs to be applied not only to the application of other models to California, but also to the implementation of proposed systems within California. The most appropriate collection system for urban areas may not be effective within sparsely populated counties with limited access to consolidation centers or retail outlets. Even where similar systems can be implemented in both rural and urban areas, the costs and associated challenges can be strikingly different. While a full analysis of these differences is clearly beyond the scope of the report, the ESJPA believes that some acknowledgement of the need for a detailed and comparative analysis of the effectiveness of various systems throughout all regions of California is essential so as to avoid across-the-board imposition of an “urban model” on rural counties--unless it is demonstrated that such a model can be reasonably and cost-effectively adapted to fit the needs of rural California.

The R3 Report emphasizes the importance of establishing goals or other performance criteria to gauge program success. In doing so, however, it will be necessary to be sure that the quest to achieve numerical goals does not override the need for producer support of rural county programs. For example, a product category may have an interim goal of, say, 80% material recovery statewide by a specified date. This goal can be met most cost-effectively by focusing on collection and recovery efforts in major metropolitan centers while avoiding the establishment of more costly programs in rural counties where only 5 or 6% of the State’s population is dispersed across 40% of the land area of California. Since all landfill bans are currently implemented on a statewide basis, regardless of geographic considerations, it is critical that any

product management systems be designed to ensure that product recovery programs are equally available to all Californians statewide and that adequate funding is available to offset costs to local government.

Because the future effectiveness of any management program is difficult to predict, the ESJPA supports the report recommendation that “flexibility should be built into any system to accommodate program evolution”. The report goes on to say that as “a collection system matures and collected product volumes increase, the efficiency of a System should also increase.” In recognition of this, the ESJPA would suggest that consideration be given to a “phase-in” approach for certain future “landfill bans” if established recovery systems are not sufficiently developed statewide so as to provide reasonably convenient access and cost-effectiveness in our rural communities. As a recovery system develops and when the associated collection programs can be more reasonably expanded to provide cost-effective collection throughout all areas of the State, landfill bans could, at that time, then be put in-place throughout all areas of California. This “phase-in” approach could help to reduce the initial start-up costs for certain product management systems and would avoid forcing rural county waste management systems to divert material for which no alternative recovery option is reasonably available.

While the R3 Report presents a useful conceptual basis for evaluating end-of-life product management systems, there clearly is a need for continuing discussion amongst stakeholders about how best to design and implement effective management systems for specific materials and for different product types. The ESJPA believes that the R3 report represents a major step forward toward this goal. The report presents compelling evidence that properly designed systems can, in fact, succeed and offers specific recommendations that can be realistically implemented—both in the short term and long range.

As with any complex system that involves a multiplicity of different interest groups, the ultimate key to success will depend on the cooperative and collaborative participation of all stakeholders—including local county and city government. With this understanding, the Rural Counties ESJPA, along with our individual member counties, looks forward to working with Cal EPA Boards and Departments on the future development of more detailed regulatory and legislative policy initiatives to help protect rural county resources and to promote cost-effective waste management programs that meet the needs of our local residents and businesses.

Sincerely yours,



Mary Pitto  
ESJPA Program Manager

cc: ESJPA Member Counties

June 22, 2007

Heidi Sanborn  
R3 Consulting Group  
4811 Chippendale Drive, Suite 708  
Sacramento, CA 95841

Dear Ms. Sanborn:

Kinsbursky Brothers, Inc. would like to express our appreciation for including our company as a Key Stakeholder in the review of Framework for Evaluating End of Life Management Systems in California.

### **1) Background Summary**

Established in the 1950's Kinsbursky Brothers, Inc. (KBI) is headquartered in Anaheim, California, KBI is a Part B permitted battery management facility that specializes in the recovery and recycling of all battery chemistries. KBI's Anaheim facility processes 4 million pounds of batteries per month.

In addition to batteries KBI manages approximately 1 million pounds of electronic waste (e-waste) per month. This waste stream is mainly comprised of copy machines, computers, and other peripheral electronics.

KBI is a major stakeholder in Toxco, which has battery operations in Columbus, Ohio, and Trail, British Columbia Canada. Each of the respective operations is permitted through the appropriate state and federal competent authorities.

Together, the three operations recycle over 75 million pounds of batteries per year. This volume is mainly comprised of lead acid battery chemistries.

KB I has developed an alkaline battery recycling program to manage common household alkaline batteries. One of the challenges facing this program has been the ability to economically offer alkaline battery recycling services to companies that wish to recycle their batteries, instead of landfilling them. The reasons for this difficulty is as follows:

- 1) No concerted efforts in California to collect alkaline batteries

While KBI has a vigorous collection program for batteries, the overall quantity of collected alkaline batteries by KBI is minimal compared to the projected number of

batteries in the waste stream. The inability to collect significant quantities of batteries results in a higher operational cost.

## 2) Lack of processing ability in California

KBI currently consolidates alkaline batteries at our facility in Anaheim, California. These batteries are then forwarded to our facility in Canada for recycling. This of course adds to the over all cost of the battery management. The reason that we manage the batteries in this way is due to regulatory issues involving the batteries.

As alkaline batteries are considered a hazardous waste in California, the DTSC, considers any potential recycling system as hazardous waste treatment. KBI does not disagree with the DTSC assessment of batteries; however the permitting process has been an inhibiting factor in moving forward in California with the design and implementation of a California recycling system.

Kinsbursky Brothers, Inc. is currently going through the hazardous waste permit renewal process. We have included, in our new permit application the necessary information to be able to process alkaline batteries at our Anaheim facility. It is our hope, that this ability will provide a solution to California, and batteries can be managed and processed within the state.

In an effort to increase collection of alkaline batteries; in 2003 KBI launched a program to manage all consumer type battery chemistries and portable electronic devices called **The Big Green Box®**. The Big Green Box® program was designed to provide a comprehensive approach to battery management, whereby participants are provided a battery management system that is used to collect both rechargeable and non rechargeable household style batteries.

The Big Green Box® is a UN rated container with a capacity of 43 pounds. The program is funded entirely by the participants of The Big Green Box® through the purchase price of the container. All shipping, recycling, and reporting functions are included with the service of the program.

By 2005, The Big Green Box had been expanded to all 50 states, as well as Canada.

The Big Green Box® is used by 8 federal agencies, including the Transportation Security Administration, (TBGB program is utilized by all federally managed airports across the United States), several municipalities and counties - not only in California, but across the U.S., private households, and of course businesses in the U.S. and Canada.

## **2) Response to “Framework for Evaluating End of Life Management Systems in California”**

As Kinsbursky Brothers, Inc. primary business focus in on battery recycling and management, we will limit our responses and provide comments “battery related”.

In Europe, there is a system of producer responsibility in place for batteries. The ideology of producer responsibility is gaining ground throughout Asia, as well as South America.

The United States of course is unique. While several states have regulatory authority (California is one) the U.S. environmental regulatory structure is basically the same across the country. California has been a leader in establishing programs (electronic waste recovery system as an example), and as a leader, California programs are duplicated not only in other U.S. states but also in other parts of the world.

The state of California has the opportunity to once again provide a groundbreaking model that can be duplicated across the United States, and beyond its borders.

With respect to the recommendations of the Contractor:

### **Element 1 - Funding Mechanism**

The Contractor is recommending a invisible fee collected at point of manufacturing, so producers can internalize costs, thereby eliminating several additional administration layers. This would result in lower involvement by retailers thus a potentially lower cost.

Kinsbursky Brothers disagrees with this recommendation, as it is important for consumers to have a visible fee in order to recognize that they are paying a fee for the management and recycling of batteries at End of life. This creates a two-fold benefit:

a) Creates an Added Value for the Consumer.

With the consumer aware of the upfront cost that they are being charged to manage batteries once the batteries are discharged, they may be enthusiastic about participating in a recovery/recycling program to “get what they paid for”

b) Enhances and Reinforces Education and Outreach.

Having a visible fee educates the consumer by emphasizing the importance of environmental stewardship. By recognizing that there is a cost associated with the management of waste, they will be further aware of the “proper” methods in which to dispose of products. This can be beneficial and expanded to other areas of the consumer’s life.

### **Element 2 – Funding Approach**

Kinsbursky Brothers, Inc. agrees that the funding approach be mandatory. This provides for a level playing field and prevents the occurrence of “free riders”.

### **Element 3 – Fee/Tax Collection Point**

Kinsbursky Brothers, Inc. recognizes that there is a potential cost savings by having fees collected at point of manufacturing. We would cautiously suggest that this is the correct path on a cost basis. However, a system, which utilizes Point of Sale fee collection system, may allow for a greater tracking of data. The monitoring of the sales of batteries gives the stakeholders data in which to calculate the effectiveness of the management system. This data may not be as transparent if fees are collected at point of manufacture.

### **Element 4 - Fund Consolidation Point**

Kinsbursky Brothers agrees with the Contractor

### **Element 5 - Fund Oversight**

Kinsbursky Brothers, Inc. is in agreement with the Contractor

### **Element 6 – Fund Management**

This element needs to be managed in the most efficient manner possible. A potential system that can be reviewed is to offer this element out for bid to a private contractor. This creates a system of competition and requires companies to be as streamlined as possible when managing the funds.

### **Element 7 – Program Oversight**

The establishment of the goals of the program, both in measurement and criteria, needs to be discussed by all Stakeholders. Realistic goals need to be set by determining the feasibility, of both the goals as well as the ability of Stakeholders (producers, processors, regulators, government) to meet them.

We recommend an approach of short term, mid term, and long-term goals/benchmarks be analyzed for feasibility.

### **Element 8 – Program Operations**

Kinsbursky Brothers, Inc. agrees with the Contractor

Once again on Behalf of Kinsbursky Brothers, Inc. we would like to that you for the opportunity to comment of this matter. We look forward to further discussions regarding producer responsibilities, and would request that KBI be included in any future discussions related to this subject.

If you have any questions regarding our comments, please contact me at 949-310-0807

Sincerely,

Todd Coy  
Vice President  
Kinsbursky Brothers, Inc.

**KYLE PITSOR**

Vice President, Government Relations

June 26, 2007

Heidi Sanborn  
R3 Consulting Group  
4811 Chippendale Drive, Suite 708  
Sacramento, CA 95841

Re: Comments on R3 Consulting Draft Report to the California Integrated Waste Management Board on "Framework for Evaluating End-of-Life Product Management Systems in California"

Dear Ms. Sanborn,

Thank you for the opportunity to provide these and attached comments regarding the subject draft report to the California Integrated Waste Management Board (IWMB). The two-week period allowed for comment was unfortunately short and we look forward to further opportunities to comment on and discuss these matters.

As acknowledged by our status as a key stakeholder, NEMA represents manufacturers in several product areas of interest to the report. Accordingly, we have compiled comments from the dry battery, lamp and thermostat manufacturers and appended them to this letter. In this way, it should be clear to the contractor and the Board that each product area is different and cannot be addressed by a one-size-fits-all approach.

Each of these industries has a solid record of environmental stewardship and reduction of hazardous materials. In addition, each of the industries agrees that shared responsibility for end-of-life product management is essential and that manufacturers should not be the only parties who bear the burden. Other parties in the product chain, including government, should play significant roles as well.

NEMA, the National Electrical Manufacturers Association, is the trade association of choice for the electrical manufacturing industry. Our approximately 450 member companies manufacture products used in the generation, transmission and distribution, control, and end-use of electricity. These products are used in utility, medical imaging, industrial, commercial, institutional, and residential applications. Domestic production of electrical products sold worldwide exceeds \$120 billion. In addition to our headquarters in Rosslyn, Virginia, NEMA also has offices in Beijing, São Paulo, and Mexico City.

We thank you for your and the Board's consideration of our comments and strongly

**National Electrical  
Manufacturers Association**

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1300 North 17th Street, Suite 1752  
Rosslyn, VA 22209  
(703) 841-3274  
FAX (703) 841-3374  
kyl\_pitsor@nema.org

Board Meeting  
July 17, 2007

NEMA to R3 Consulting/Agenda Item 11  
Comments  
Attachment 1  
June 26, 2007

encourage their inclusion in the final report to the Board. Should you have any questions, please feel free to contact me or Mark Kohorst, Senior Manager, Environmental Health and Safety, at (703) 841-3249 or mar\_kohorst@nema.org.

Sincerely,

A handwritten signature in black ink that reads "Kyle Pitson". The signature is written in a cursive, flowing style.

attachments: 3 sets of comments, as indicated

## **Comments of the NEMA Dry Battery Section**

Contractor's Draft Report to the Board

"Framework for Evaluating End-of-Life Product Management Systems in California"

June 26, 2007

Thank you for the opportunity to provide comments on the contractor's draft report on EOL management systems from the perspective of the NEMA Dry Battery Section, which represents major manufacturers of portable primary batteries, including general use household alkaline batteries.

The draft report starts with several assumptions or premises that we feel are erroneous. We feel it is critical that any discussion of the merits of EOL systems begin in the right place, and therefore we offer the following observations before we comment on the specifics of the report:

- 1. *Primary batteries do not pose an environmental or health risk when disposed under typical landfill conditions.*** There is a body of scientific research, which is currently be added to, on the impacts of battery disposal in normal landfilling conditions. All studies conducted to date conclude that battery disposal does not represent an environmental threat. NEMA has long disagreed with DTSC's regulatory designation of batteries, as it is not consistent with this body of scientific study. We would be happy to provide these studies. In addition, primary batteries make up an extremely small percentage, both by weight and by volume, of landfilled waste in California. In its most recent statewide waste characterization report (CIWMB, 2004), the CIWMB estimated that the average concentration of batteries in solid waste disposed in California (in calendar year 2003) was 0.1% by weight. This low percentage includes all types of batteries disposed, not solely primary batteries.
- 2. *End-of-life programs should not be initiated or mandated unless a rigorous analysis shows they result in a net environmental benefit.*** It makes common sense that an environmental program should result in real environmental benefits, especially when there are significant costs to consumers and citizens. Given the lack of volume that batteries represent in the waste stream, their lack of toxicity, and the lack of environmentally-efficient recycling processes for batteries, batteries make a poor choice of product for most types of EOL programs.

Several recent government-sponsored studies from the UK and France demonstrate that systems for collecting consumer batteries can have a greater detrimental environmental impact than the benefits gained from recycling these batteries, and carry a significant financial burden that is disproportionate to any potential environmental impact. These European studies demonstrate that transportation of collected batteries is the key parameter influencing the environmental impact assessment. These studies showed that for batteries that do not contain toxic metals, such as primary batteries, the negative environmental impacts of increased transportation often is the key in outweighing any environmental benefit. This becomes even more important as issues related to climate change are becoming more prominent from a public policy perspective, an issue that wasn't fully addressed in these studies.

We are pleased to see that the draft report concludes that a worthy area of R&D for the CIWMB is to conduct “lifecycle analysis of the management options to determine the real environmental and economic benefits and challenges ...” We would urge that this LCA be material and/or product specific, and would be happy to collaborate with the CIWMB on this effort if batteries are to be considered.

3. ***A policy objective of 100% collection rate is not realistic or achievable.*** Our industry has 15 years of experience implementing EOL collection programs in Europe. One of the key lessons is that 100% collection rates, and complete landfill bans, cannot be achieved for primary batteries. Collection rates depend primarily on consumer behavior, which is determined by their values and willingness to participate. In countries in Europe with highly aware consumers and excellent municipal and retailer collection infrastructure, the maximum collection rate that has been achieved to date is 40-50% – after 10 years of operation. In the countries that have reached 40-50%, significant money has been spent over the 10-year period on advertising and training, at considerable expense to industry and consumers. An unrealistic public policy objective puts all stakeholders – local authorities, municipal collectors, retailers, consumers and producers – in a non-compliant situation.
  
4. ***Product-by-product approaches to EOL management are not necessarily the most effective or efficient approaches.*** Recycling technologies are often specific to material types (e.g. metal, paper, plastic) as opposed to product type. Sorting of like wastes at local municipal waste collection points may likely be a much more efficient way to get the right materials to the right recycling processes than creating new collection points for myriad of different products.

Given the comments above, we have reviewed the draft report with an assumption that any EOL programs that California embarks on would be initiated only after a thoughtful Life Cycle Assessment is done to determine the relative environmental merit of such a program. Assuming there is a real environmental benefit that can be gained for a specific product or material type, we agree that the eight system elements and the model framework are useful tools for evaluating EOL management systems.

We agree also with the contractor on the importance of partnerships between manufacturers and government agencies, which “can leverage costs associated with outreach and collection activities” and should “benefit from the experience that their partners have to most efficiently utilize existing infrastructure and established management processes.”

Accordingly, we propose more of a shared approach that allows each party to do exactly what they have already proven they can do and at which they are best. Our preferred approach would be for industry to implement the programs, with minimal oversight by the State. An important State role would be to implement a reporting system to ensure any producer selling product in the state participates in the system(s). Herewith we offer our recommendations and rationale for EOL product management system elements:

**Recommended System Elements**

<b>Element</b>	<b>CIWMB Contractor Recommendation</b>	<b>NEMA Battery Section Recommendation</b>
Funding Mechanism	Invisible fee	Dependent on the program; invisible for an industry led and managed program, visible for a state-run program
Funding Approach	Mandatory	Mandatory
Fee Collection Point	Point of Manufacture (POM)	Point of Sale (POS)
Fund Consolidation Point	PRO or individual producer	Dependent on the program
Fund Oversight	Government	Government
Fund Management	PRO or individual producers	PRO
Program Oversight	Government	Government
Program Operations	Parties most appropriate	Parties most appropriate

**Discussion**

1. Funding Mechanism – Dependent on Program

If the State were to mandate the specifics of a battery collection and recycling program, in such a way that the cost is largely driven by the State, we feel that consumers should be aware of the additional cost resulting from the requirements set by the California state government. It must be clear that the industry is not realizing additional revenue from the increased price of the product. The arguments the contractor raises against visible fees are weak. Alleging that “a number of fees being listed separately on [retail] receipts...can be confusing to the consumer” underestimates the sophistication of the California consumer, whose “sentiment” regarding EOL product management is cited at the beginning of the report. California consumers should be given sufficient information about the collection and disposal services they are paying for, just as they are required under consumer protection law to receive information from vendors about other products and services they purchase. The report states at one point that an important state role is to ensure transparency – this starts at the fee imposed on consumers.

2. Funding Approach – Mandatory

We believe strongly that participation, and therefore funding, should be mandatory so that everyone must participate. If funding is only voluntary, only the major battery manufacturers present in the U.S. will be under pressure to foot the whole bill. Parties who are harder to reach,

such as manufacturers of batteries sold with products, manufacturers of batteries imported into the U.S., and retailers who import batteries, will get a free ride.

### 3. Fee Collection Point – Point of Sale (POS)

Contrary to the contractor's draft conclusion, the fee collection point should be POS so that California has the authority to enforce participation. To promote a level playing field, any fee on batteries should also include batteries sold in or with battery-using products. If the fee is assessed at point of manufacture California will not have the authority to enforce it outside its borders. If the fee were to be assessed at disposal the fee would not generate enough revenue because many people will just discard the batteries into the general waste stream without paying a fee. For example, it is difficult to dispose of a washing machine or refrigerator without paying an EOL fee. It is easy for a consumer to toss an AAA alkaline battery into a trash receptacle.

### 4. Fund Consolidation Point – Dependent on Program

For Government mandated and controlled programs, fees collected at POS should be consolidated in a government account devoted to financing program operations, including collection of EOL products. For programs that are led and managed by industry, with state oversight to ensure there are no free-riders, the funds could be consolidated by the industry program itself.

### 5. Fund Oversight – Government

We agree that the government has a role in fund oversight, regardless of whether the program and the funds are controlled by government or industry.

### 6. Fund Management – Producer Responsibility Organization

A PRO should manage the portion of the funding devoted to recycling of EOL batteries. The PRO will have the expertise to plan and invest for "program evolution", as discussed in the contractor report.

### 7. Program Oversight – Government

Since a program is to be mandated by the government, the government should have oversight responsibilities.

### 8. Program Operations – Government and PRO

The government should use its municipal waste stream infrastructure to collect and consolidate batteries. State, county and municipal governments have over 100 years experience in collecting waste. The battery industry has zero experience in collecting waste. The government should also be responsible for driving the recycling rate. The battery industry has no ability to make end users recycle their batteries. The battery industry, with some funding from the state derived from

the visible fee assessed at POS, would consolidate and recycle sorted batteries once they are collected at municipalities and counties.

Thank you for the opportunity to share our views and we look forward to further opportunities to discuss EOL management issues with the CIWMB.

## **Comments of the NEMA Lamp Section**

Contractor's Draft Report to the Board

"Framework for Evaluating End-of-Life Product Management Systems in California"

June 26, 2007

Thank you for the opportunity to provide comments on the draft report.

NEMA's Lamp Section represents manufacturers of lamps used in the commercial, industrial, institutional, residential, automotive, and specialty lighting markets. The members of the NEMA Lamp Section have a comprehensive product stewardship effort designed to produce better lighting products and systems, in a five-part program: minimize mercury content of lamps, increase product life, improve lighting efficiency, label products and encourage recycling. A separate paper on this effort is available from NEMA.

The following comments are based on the understanding that the contractor's report addresses a system for collection and recycling of consumer EOL products. Spent lamps from businesses are already collected and recycled through an efficient and effective third party network.

The contractor presents many thought provoking product-recycling examples for consideration. Of particular note is the fact that each product has developed a unique solution that best fits the recycling needs of that unique product. While this makes it is absolutely clear that one solution does not fit all products, a serious concern arises with the conclusion of the report suggesting there is one best solution for all products. Because one solution clearly does not fit all products, the one EOL Product Management Framework suggested by the report conclusion must clearly be the wrong solution for most product types. In summary, we believe it should be clear from the contractor's report that a diversity of systems exists because each product stream is different and there cannot be one approach that appropriately addresses all product streams.

Moreover, the contractor's rationale that producer responsibility will provide an incentive for manufacturers to make more environmental products is without foundation. The lamp industry's reduction in mercury use is a perfect example. With no reduction or collection requirements whatsoever, the lamp industry has reduced its use of mercury in lamps from 23.6 tons in 1990 to 7 tons in 2003 while sales increased.

This report starts out by assuming that producer responsibility is the appropriate approach. In fact in the top paragraph on page 4 the draft report suggests that a shared responsibility approach is most appropriate but then goes on to recommend an approach that does not follow that suggestion. The appropriate approach to EOL product management is shared responsibility rather than producer responsibility, so that everyone involved in the product plays an appropriate role for that product.

### **Universal Waste Lamps**

To illustrate the flaw with the report conclusion, let us consider how this one-size-fits-all framework might be applied to Universal Waste lamps collection and recycling. The overall

premise is that “Household Hazardous Waste (HHW) Collection Centers” or the “Retailer/Manufacturer (R/M)” will collect lamps.

### Funding Mechanism

The conclusion states that the fee must be invisible. This position would provide no flexibility to the retailer/manufacturer or HHW collection center to decide how best to offer a recycling service. While some retailers may choose to provide an invisible fee, others may choose to show a fee. Depending on marketing strategies, HHW centers or Retail locations should be allowed to create and develop their own approach to covering costs depending on their individual situation. We do agree that Option B, a tax, is not preferable, as there is no guarantee that the funds would be used for recycling or that the recycling rate would increase.

The manufacturers of lamps generally do not sell direct to the public and almost always sell through a retailer partner. When they sell products to a national retailer, manufacturers have little idea where in the U.S. the products will be sold. So there would not be a transaction for which manufacturers could even try to apply a fee.

The report says without any support that a visible fee would increase work for retailers but says nothing about how retailers in California currently collect the state sales tax, excise taxes on beer, wine, spirits, cigarettes, and gasoline, beverage container deposits, fees on lubricating oil and advance fees on tires and electronics. The report also says without any support that an itemized receipt could confuse customers even though there has been no confusion reported by California on either the tire or e waste fees. It also ignores the fact that the itemized receipt serves as an educational tool for consumers. An invisible fee provides no transparency about disposal or the importance of recycling. Showing the customer that recycling charges are an added cost will provide additional information the customer needs to make the decision about purchasing a compact fluorescent lamp (CFL), for example, shows that there are costs for recycling CFLs and that the future disposal is being addressed when the bulb is purchased.

While a visible fee may increase responsibilities for retailers, they would do the same for manufacturers. Requiring additional charges to be added to products only being shipped to a particular state adds burden to the manufacturer’s logistics and accounting systems.

When discussing its preference for an invisible fee, the report says – without any supporting documentation – that end of life costs are internalized into product price. This shows a lack of understanding of the current economic system. First, as noted above, without a transaction in California there is no way to include the price of a fee into products sold in California. Second, the statement assumes that manufacturers can simply pass on all their costs. For manufacturers of commodity products, competition can limit or even preclude adding the cost into the price of the product. In addition, the emergence of mega retailers also severely limits the ability to pass on costs in many markets.

The report says without any support that cost internalization may encourage green design. This is erroneous for the reasons outlined above. But such a fee cannot encourage any green design

because there is no feedback mechanism to manufacturers from such a fee. The fee applies no matter how manufacturers make products.

Visible fees are preferred over invisible fees. Lighting products are extremely low cost compared to almost every product in the eight case studies. Collection and recycling costs could add 20-25% to the price of the product. With a \$1,000 product like a computer, \$.50 could truly be an “invisible fee.” But with lighting, this merely raises the cost significantly. CFLs and other energy-efficient lighting products reduce energy consumption and have a net mercury benefit. The amount of mercury avoided from reduced fossil fuel consumption from the power plant is greater than even the small amount of mercury placed in the lamp. By increasing the cost of a CFL by 20-25% or even more, consumers are less likely to purchase (or be able to afford in some cases) a CFL. Any POM fee would drive up the cost of this product and thereby fail to lessen environmental impacts.

If there is an existing system in place, why did the contractor not consider this? Is it because none of the case studies included it? On page 18, the report states that “There is no formal system in place outside of local tipping fees or HHW fees on solid waste bills to fund ongoing programs.” Clearly, these two systems are in place and could cost-effectively for lamp recycling. However, this was not explored in this report. We recommend that these systems be further explored.

CONCLUSION FOR LAMPS – DO NOT AGREE

#### Funding Approach

The conclusion states that this should be mandatory. Any program should start with a voluntary approach. As was pointed out in the report, some of the most successful recycling programs operate on a voluntary basis. A mandatory approach should only be used as a last resort and only after every attempt has been made to develop a successful voluntary approach. Retail in particular is very competitive. If one retailer develops a successful program, others will likely follow.

CONCLUSION FOR LAMPS - DO NOT AGREE

#### Fee Collection Point

The report says manufacturers generally oppose a fee at “Point of Manufacture” but does not even attempt to explain what those objections are and whether they are valid. Some of the most successful programs operate at “Point of Sale” or “Point of Service”. In fact, the various programs clearly indicate that the fee collection point should be optional and will vary based on the situation. The retailer/manufacturer may choose to collect fees at Point-of-Sale from a visible or invisible fee.

The contractor concludes that fees collected at POS increase costs, and their recommendation is to implement a POM collection point. We must remember that the goal is not to eliminate actors and lower administrative costs but to implement an effective system that guarantees a greater rate of recycling.

That being said, secondary layers or incremental costs are wasteful when they add no value or efficiency to a program. Introducing a third party to collect fees or asking the government to collect fees adds unnecessary overhead to the cost structure. It is imperative to keep the cost of recycling lamps as low as possible since recycling can become a significant cost in relation to the overall product cost.

The Retailer/Manufacturer or the HHW center must also be allowed to negotiate the best possible pricing from competing companies within the existing lamp recycling industry. Depending on location and the volume of lamps collected, the lamp recycling costs can vary significantly throughout the state. Therefore, there is no "one lamp recycling price" that makes sense to collect from the Point of Manufacture.

In addition, lamp manufacturers make lamps for a national market, delivering lamps to national retail distribution centers that serve several states. The retailer will ship lamps to multiple states from these centers and even directly import lamps into their store locations. Point-of-Manufacture collection makes little sense for lamp recycling and most likely several other products as well.

The report gives no consideration to border sales. California is bordered by three other states -- Arizona, Nevada, and Oregon. If the cost of lamps in California is driven up by the inclusion of a fee, those businesses and consumers living along the borders will likely purchase their lamps where they are cheaper. They will return/recycle them within California where the recycling is "free" to them. The recycling costs will not have been paid for in the initial purchase, so there may be a deficit in the recycling fund.

If the goal is to place a fee on lamps sold in California to increase the likelihood that they be recycled, then the most streamlined way to assure this is fee collection at POS.

CONCLUSION FOR LAMPS – DO NOT AGREE.

#### Fund Consolidation Point

The report recommends a PRO or individual producer. It is most likely that Retailer/Manufacturer partners would collect funds in the most efficient manner at Point of Sale or Point of Service. The HHW centers would be funded with existing funding mechanisms. If Retailer/Manufacturer programs were successful, fewer and fewer products would go to HHW centers actually reducing costs at these centers.

CONCLUSION FOR LAMPS – PARTIALLY AGREE.

### Fund Oversight

The report recommends government. HHW funding would most likely receive government oversight. No government oversight would be required for a retailer/manufacture program. If lamps are being recycled, the cost of recycling would be part of the competitive retail environment ensuring costs are kept low.

CONCLUSION FOR LAMPS – DO NOT AGREE

### Fund Management

The report recommends a PRO or producer. We do not see the need for a PRO in the lamp collection and recycling area. Funds would be managed by the HHW or the Retailer/manufacture partnerships in the most efficient manner.

CONCLUSION FOR LAMPS – PARTIALLY AGREE

### Program Oversight

The report recommends the government have responsibility for program oversight. The DTSC can play an oversight role in ensuring that lamps collected are properly stored, shipped and recycled.

CONCLUSION FOR LAMPS – AGREE

### Program Operations

The report recommends that all stakeholders should be included in the operations. We agree that multiple systems and flexible options should be allowed. However, the contractor is naïve in thinking that “the number of actors that can be asked to participate in the collection systems is almost unlimited...” This is a starting point, but what about the number of actors willing to participate?

The issue with lamp recycling has always been with collection. Who pays is secondary to how it can be collected. Even with a large fund, the recycling rate will remain low if there lacks a simple, effective, and convenient collection mechanism for businesses and consumers.

Consumers are more likely to recycle when it is convenient for them and makes sense. Bringing an old bulb to be recycled where they are likely to buy a new one is intuitive. It’s simple, and it eases the burden for consumers who can’t store a single CFL until HHW collection day, for example, or won’t drive across town merely to bring a CFL to a transfer station. Make it simple, convenient, and intuitive. In each of the case studies presented, there was a clear mechanism for take back that followed this model. Lighting manufacturers have been working with retailers on

development of take-back programs for CFLs, primarily, and have not been able to overcome the existing barriers.

Furthermore, CFLs are breakable, and mercury is released into the environment when the glass is broken, posing both environmental and health concerns. None of the case studies had similar retail collection and liability concerns, and therefore had no retailer push-back. On page 79, the contractor concludes in point #4 that CIWMB should “conduct further research on the benefits and challenges of retail take-back efforts.” This should have been the first thing researched. There is some success with the PG&E TakeItBack model, but the retailers are small, and it is unclear as to whether this model can be replicated with larger stores, where a significant number of CFLs are sold.

CONCLUSION FOR LAMPS – AGREE.

### **Conclusion**

Lastly, the contractor’s premise is that the definition of Producer Responsibility is one of complete financial burden. The contractor is not considering how best to achieve the end goal – increase the recycling rate. This is unachievable without a multitude of stakeholders, who also hold some responsibility.

Again, producer responsibility can be included in any existing system, but the definition may need to be broadened to consider other ways that producers can demonstrate responsibility beyond that of complete financial burden.

As shown in the report’s “case-studies”, each product presents unique issues. It is not appropriate to suggest the one solution will fit all products. Each product should be allowed to develop a recycling approach that fits its unique characteristics and issues.

## **Comments of the Thermostat Recycling Corporation**

Contractor's Draft Report to the Board

"Framework for Evaluating End-of-Life Product Management Systems in California"

June 26, 2007

The Thermostat Recycling Corporation thanks you for the opportunity to provide comments on R3 Consulting's (contractor) report on EOL product management systems for the California Integrated Waste Management Board.

While we do not disagree with the contractor's discernment of eight elements of an EOL system, we are extremely concerned with the approach to (producer) shared responsibility taken by the contractor. We are also troubled by multiple errors and omissions made in the draft case study on the state of Maine's "Mercury Thermostat Stewardship Law".

However, before citing the errors in the case study we must also state strongly our concern that the contractor has chosen largely to ignore the success of the Thermostat Recycling Program (TRC) in collecting and recycling EOL mercury-containing thermostats since well before any state initiatives, including Maine's, were adopted.

TRC is a voluntary, industry-sponsored program that provides a mechanism for the proper disposal of mercury switch thermostats, regardless of brand. Approximately 1,400 wholesale suppliers of thermostats and 225 heating, ventilation, and air conditioning (HVAC) contractors participate in the TRC program (full lists of participants are provided at [www.nema.org/trc](http://www.nema.org/trc).) HVAC contractors can participate provided they have at least seven contractors or technicians in the firm, or are located in a rural county.

While the contractor reports that effectiveness of the Maine law is "to be determined", the effectiveness of the TRC is very clear even considering its narrow and yet expanding scope. Operating nationwide, the TRC recently reported record collection of mercury thermostats for 2006, evidence that the program is increasing its visibility and reach. The TRC collected more than 113,600 thermostats containing over 1,080 pounds of mercury during the year, representing increases of 29.3% and 32%, respectively, over 2005 results. In Maine alone, thermostat collections rose 126% in 2006, without any mandated legislation or incentive in place. Also, California had a 30% increase in thermostat collections, and 67% increase in mercury collected in 2006 (among the highest increases in the country), again without mandated recycling programs in place. With its recently announced expansion to local household hazardous waste (HHW) collection facilities and pilot project for retailer collection facilities, the TRC is poised to realize even more dramatic results in 2007 and beyond.

From its inception in January 1998 through the end of 2006, the TRC program collected 534,477 mercury-switch thermostats and thereby removed almost 5,100 pounds of mercury from the nation's waste stream.

The TRC originally focused on wholesalers and contractors because they sell and install the majority of thermostats and the industry already has the infrastructure to support an effective collection program. By expanding to HHW facilities, the program is now able to offer a

recycling option to individual homeowners in many localities. If retailers' pilot projects develop and expand nationwide the TRC will significantly expand recycling options for everyone.

In summary, we believe the contractor's conclusions do a disservice to the Board by largely omitting the TRC from its discussion. Furthermore, in sharp contrast to Maine's efforts, the TRC focuses on shared responsibility and at minimal cost for state and local governments (one time purchase of a bin for the recycled products and minimal oversight). It also avoids the cumbersome bounty process that is expensive, time consuming and unproven as a viable means to increase recycling. In other words, Maine's cost to everyone appears to seriously outweigh any benefits it may add to an effective recycling effort.

In addition, we cite several significant factual errors made in the Maine case study:

At the outset of the case study, the contractor claims that revision of LD 1792 by the Maine Department of Environmental Protection (DEP) was developed through a consensus process. A stakeholder group did develop an implementation plan for the law, but the plan developed does not faithfully adhere to the law's mandate. For example, the contractor cites that the law requires the plan to encourage the purchase of Energy Star qualified thermostats as replacements for mercury-containing thermostats collected. In fact, the law is being implemented without any tie to the purchase a new Energy Star qualified thermostat. Apparently, Maine has abandoned energy conservation as a key principle that was used to arm-twist producers to agree to any bounty in the legislation. This should be a point of concern for California.

### Funding Mechanism

The funding mechanism of the Maine law is not "mandatory fee at the point of manufacture" as the contractor claims. Such a system would imply that manufacturers pay a fee for each thermostat produced – this is not the case. The "mandatory fee" is in fact a check that is provided to an HVAC installer for each successful return of an EOL mercury thermostat. As stated previously, there is no link to the purchase of new equipment nor was there any concern as to how this mandatory fee will impact the producers who bore the entire burden of this additional cost.

Note that the mischaracterization of the mechanism must also be corrected in the chart on page 40 of the draft showing the system elements and types.

### Performance Goal

The performance goals stated in the case study (125 lbs and 160 lbs) are acknowledged by Maine's DEP to be aspirational goals that are unlikely to be met in practical reality. This provides little comfort or assurance to those producers who are subject to the proscribed penalties under Maine law. This also raises the issue of cost – how much is it worth to try to capture every thermostat. Maine has acknowledged that, and it is stated in the case study, that not all of the removed thermostats will be successfully collected and recycled, although a large percentage will be.

A serious flaw in the Maine program is the failure to plan for the eventual elimination of mercury switched thermostats. The Maine plan anticipates an ever-increasing intake of thermostats. If the program is successful, this cannot happen because unlike batteries and light bulbs, they are being banned or phased out in most states. The expectation is that over time the collections will peak and then decline as the installed base of mercury-containing thermostats is removed and turned in. Maine fails to recognize this transition.

### Baseline Data

The 5,600 pounds of mercury cited as potential mercury to be collected under the Maine system has no statistical basis and cannot be articulated, documented or verified. It is an estimate based on back-of-the-envelope calculations.

### EOL System Diagram

There are several errors in the diagram, which, for example, has funds being transferred from municipal HHW to the consumer.

### Costs

In specifying only the costs to the State of establishing and operating the system, the contractor severely underestimates and understates the costs associated with making the program function effectively. In California the cost estimates for implementing and regulating a Maine system will be significant even if manufacturers bear a very significant cost to capture the small percentages of thermostats collected outside of a TRC-driven process that includes participation from HHWs and retailers.

This raises the policy issue of what are acceptable and appropriate costs for collecting the small number of thermostats that are not collected in a voluntary program.

### EOL System Elements and Shared Responsibility

While we do not argue with the contractor's discernment of eight elements of an EOL product management system, we question how the contractor's recommendations can flow from the lessons learned in the case studies. The report cites the "sentiment" in California behind a move to place financial burden on producers and consumers for EOL management. However, rather than distributing the responsibility among all stakeholders who have benefited from the products' "life" (manufacturer, retailer, consumer), the recommendations place all of the burden on the producer.

We believe California should avoid creation of a new bureaucracy by

- Emphasizing true shared responsibility for EOL product collection, recycling and financing
- Recognizing that each product area needs to be examined individually to determine the appropriate solution for California

- Giving TRC a chance to work, expand its reach and operation and continue its success without adding costs to state and local governments.
- Leveraging existing infrastructure and sunk costs on household hazardous waste collection facilities and consumer education materials

**From:** Dave Darling [ddarling@paint.org]

**Sent:** Tuesday, June 26, 2007 9:15 AM

**To:** mleary@ciwmb.ca.gov

**Cc:** Heidi Sanborn; Alison Keane

**Subject:** Final Comments on CA End of Life Framework.doc

June 26, 2007

Mark Leary, Executive Director  
California Integrated Waste Management Board  
1001 I street, P.O. Box 4025  
Sacramento, CA 95812-4025

**RE: Contractors Report to the Board: Framework for Evaluating End-of-Life Product Management Systems in California**

Dear Mr. Leary:

The National Paint and Coatings Association (NPCA) is submitting comments on the above referenced document, specifically with respect to the document's recommendations for the end of life management for paint. NPCA is a voluntary, nonprofit trade association based in Washington DC and representing some 350 manufacturers of paints, coatings, adhesives, sealants, and caulks, raw materials suppliers to the industry, and product distributors. As the preeminent organization representing the coatings industry in the United States, NPCA's primary role is to serve as ally and advocate on legislative, regulatory and judicial issues at the federal, state, and local levels. In addition, NPCA provides members with such services as research and technical information, statistical management information, legal guidance, and community service project support.

**General Comments:**

NPCA is committed to the management of post consumer paint in an environmentally sensitive and economical manner. One of the most inefficient and costly issues in end-of-life (EOL) management of latex paint is the treatment of leftover latex paint as hazardous. It is important that the CIWMB look at the risk of products that are to be covered under the EOL management programs – since the intent of these programs is to set up frameworks to handle hazardous wastes. NPCA strongly suggests that there needs to be risk evaluation step in the implementation process to examine the inherent risk of products to be covered by the EOL management programs, particularly ones where the impetus for post-consumer waste management is put squarely on the manufacturer or the product, as this report suggests. This must be done in order to justify the expense of any management program and to prioritize which products need to be

managed based on their inherent risk. Latex paint does not pose a significant risk to the environment if disposed of in the municipal solid waste stream and, therefore, should not be considered Household Hazardous Waste (HHW). Board Meeting July 17, 2007 Agenda Item 11 Attachment 1

Managing leftover latex paint appropriately, as non-hazardous waste, would alleviate much of the bulk and cost of many household hazardous waste collection programs and provides greater opportunities for reuse and recycling activities. California, however, and specifically the California Integrated Waste Management Board (CIWMB) has refused to adopt this as a policy, and so continues to treat paint wastes as hazardous, thereby incurring costs associated with handling post consumer latex paint via the expensive HHW system. The historical basis for the State's treatment of latex paint wastes as "presumptively hazardous" is the toxic ingredients that used to be contained in architectural coatings, such as lead and mercury, which are no longer utilized. In fact, NPCA is currently working with the California Department of Toxic Substances Control on an outreach program for HHW sites to identify which post consumer latex paint need not be treated as hazardous based on its date of manufacture (formulated after the use of these toxic substances ended). As the report correctly points out, liquid latex paint can not be disposed of in California landfills, however, non-hazardous latex paint that has been dried can legally be disposed of in California landfills. In some cases, this is in fact the most efficient and cost effective approach to the disposal of these latex paints, particularly post-consumer latex paint in small and unusable quantities.

Furthermore, CIWMB has been involved in the Paint Product Stewardship Initiative (PPSI), spearheaded by the Product Stewardship Institute (PSI). This multi-stakeholder dialogue has collaboratively worked together to explore and assess possible solutions to minimize the consequences of leftover paint, including the formulation of a nationally coordinated system for the management of leftover paint. As a member of PSI and an active participant in the PPSI, CIWMB should adhere to the principles and products that have been produced by the initiative. In this respect, the PPSI's recommended consumer paint guidance follows a hierarchy of waste minimization, reuse, recycle and then disposal, which includes drying and disposing of latex paint. Thus, NPCA requests that the report recommendations follow this approach and include the drying and land-filling of non-hazardous latex paint as a viable EOL option. At the very least, dried latex paint should not be banned from landfill disposal as an approach to EOL management.

Similarly, NPCA requests that the report more accurately reflect the current work by the PPSI on building a nationally coordinated management system for the management of post consumer paint. While the report recommends a mandatory, invisible eco-fee at the point of manufacturer, the PPSI and the new PSI Memorandum of Understanding (MOU) are exploring a voluntary, transparent fee at the point of retail run by a Producer Responsibility Organization (PRO). While the report recognizes that "programs financed with advance recycling fees have burdened

state government with the role of consolidating and managing funds, which may not be the most cost-effective solution,” and that, “legislatively-mandated programs generally set system design parameters ‘in stone,’ which limits program responsiveness and flexibility over time,” (page 4), its ultimate recommendations for paint run contrary to these statements and the current PPSI approach. In fact, while the report appropriately uses British Columbia’s Product Care as a case study and an example of a highly successful PRO program, as stated below, the recommendations choose only certain elements of Product Care and not the full system, thereby negating the flexibility and efficiencies that have made the program the success it is.

NPCA believes that the paint industry as well as other stakeholders to the PPSI have made good faith efforts with respect to developing a nationally coordinated approach to the management of post consumer paint. As stated, CIWMB staff have been active participants in the PPSI, so we were therefore surprised to find that this document was being developed and believe that despite the opportunity to comment on the report at this stage, the PPSI’s input and comment during the development of the report would have been much more valuable. This is evidenced by the fact that, as stated above, the report does not accurately reflect the work that the PPSI has produced. Thus, NPCA requests that the report’s recommendations be revised to reflect the PPSI multi-stakeholder approach to date or remain silent as to specific recommendations on paint EOL management until the PPSI’s dialogue’s recommendations/system is complete.

Finally, NPCA believes that the perceived “objectivity” of the report is very important, especially since the report recommends legislative change in order to implement its recommendations. While the report’s disclaimer states that the statements and conclusions contained within are those of the contractor and not necessarily those of the CIWMB, and thus, should not be cited as official policy or direction, it is unclear as written, as to whether the report is really a product of an independent analysis or if the report was written primarily to “justify” current and future CIWMB’s policies with respect to EOL management systems. NPCA’s concerns in this regard result from but are not limited to the following:

1. Six of the eight case studies presented include visible fees, however the report recommends an invisible fee.
2. As noted in the limitations section of the report, 40 different EOL management systems were reviewed, but only eight were used for the findings and recommendations developed by the report’s authors.
3. In the recommended system elements section the report states that “The recommended Elements intend to align with the CIWMB’s core values,” suggesting the contractor aligned the report with official policy.
4. On page 15, the report states that “the contractor worked closely with Board staff who guided the contractor throughout the Report development, again suggesting specific direction was given by the CIWMB.

5. As noted on page 5 “Per the CIWMB strategic directives, a producer managed and producer financed system is desired. With that policy direction and the general findings from case studies, the contractor recommends the CIWMB consider the following...”

Thus, despite its disclaimer, the report appears to be in fact, a CIWMB product, espousing Board policy and direction on EOL management systems. If this is the case, it should be clearly stated in the document and the document should be open for wider stakeholder review and comment.

### **Specific Comments:**

While NPCA agrees with the goal of expanding the State Green Procurement policies to drive market-based solutions (page 4), history suggests that for recycled paint, these policies have not been successful. Thus, until market-based solutions can be proven, the report should not recommend unachievable recycling goals, such as the 100% recycling goal suggested by several of the case studies and in the reports comments on next steps (page 82). In fact, setting high goals such as 100% “or as close to it as possible,” for any EOL management is unrealistic and sets the programs and its participants up for failure.

The case study on British Columbia’s Product Care and subsequent recommendations based on such reflect some inaccuracies. Most notably, the sidebar of the case study states that the program has a performance goal that “all paint is returned and that 100% of paint is reused as paint.” This statement is incorrect as this is not a performance goal of the program. In fact, collected paint is managed in various ways and not all can be reused as paint. In addition, while many of the paint recommendations are predicated on the Product Care program, the report is disingenuous in listing only those program elements that the report recommends. Specifically, the report recommends that there be a mandatory, invisible fee at the point of manufacture and lists Product Care as an example of those elements. In fact, Product Care’s approach is much more flexible than the report’s recommendations purport and its system is different depending on which Canadian Province is being outlined. For example, the enabling legislation does not set mandatory fees as the report’s case study and recommendations state. Instead, the Product Care system, particularly the British Columbia model, allows for a visible eco-fees as well as reimbursement of those fees through the retail establishments. This should then be reflected in the recommendations, instead of the current report’s incorrect use of the British Columbia system as an example of mandatory, invisible fees at the point of manufacturer.

The report incorrectly states that fees can often be incorporated into the price of the product, or passed on as a visible fee to the consumer (page 73), when in fact, because of long term contracts and retailer demands, these fees can often not be absorbed and in most cases can not be passed on to the consumer. In addition, as the product stewardship approach is a shared responsibility, including the consumer who has the ultimate control over the disposal of the products they buy,

the consumer should be aware of the cost and effort of the disposal. Furthermore, in a shared approach, the retailer who is responsible for marketing and selling the product should also bear some responsibility for appropriate EOL management. Thus, NPCA disagrees with the reports recommendation that because a transparent fee would be “confusing to consumers and increase costs for retailers,” (page 73) that an invisible fee should be imposed.

## Conclusion:

In conclusion, NPCA reiterates that the development of this document with regard to paint should have been shared with the PPSI group at a much early stage, given the groups collaborative work on a nationally coordinated system for the management of paint as well as the CIWMB’s participation in the initiative. If this had been done, we believe the report’s recommendations would more accurately reflect the current views of the initiative as well as the next steps in modeling an EOL management system for paint – namely, a voluntary PRO approach with a transparent fee, utilizing a management hierarchy of waste minimization, reuse, recycle and disposal, including the drying and land-filling of latex paint. Thus, NPCA requests that the report be revised to reflect this approach, or in the interim, while details of the new PPSI MOU are still being determined, that the report remains silent as to recommendations for paint. In order to truly have a “nationally” coordinated system for EOL management for paint, the CIWMB needs to be part of the process and recognize the recommendations that are developed through the PPSI, instead of drafting their own.

Please do not hesitate to contact us, should you have any questions or need additional information.

Sincerely,

/s/

David F. Darling, P.E.  
Director, Environmental Affairs

/s/

Alison A. Keane, Esq.  
Counsel, Government Affairs

Cc: Heidi Sanborn, R3 Consulting Group

*\*\* Sent via email and in hard-copy \*\**

**From:** Pamela Williams [PWilliams@calretailers.com]  
**Sent:** Tuesday, June 26, 2007 1:56 PM  
**To:** Heidi Sanborn  
**Subject:** RE: Comments on the End of Life  
[That would be perfect!](#)

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**From:** Heidi Sanborn [mailto:hsanborn@r3cgi.com]  
**Sent:** Tuesday, June 26, 2007 1:58 PM  
**To:** Pamela Williams  
**Cc:** cdunn@ciwmb.ca.gov  
**Subject:** RE: Comments on the End of Life

Pamela,

Thank you for letting us know the situation. It certainly is a busy time in the legislature.

For the report, I will simply note that your organization would like to participate in future discussions and that the California Retailers Association supports Producer Responsibility. Is that ok?

Heidi

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**From:** White, Chuck [cwhite1@wm.com]  
**Sent:** Tuesday, June 26, 2007 4:42 PM  
**To:** Heidi Sanborn  
**Subject:** RE: Request for Comments on the CIWMB Framework for Evaluating End-of-Life Product Management Systems Report  
[Heidi --](#)

I'm afraid that I won't be able to provide you the level of comment and detail your report deserves, but here are my observations consistent with our recent discussion.

- The report is restricted to only those wastes that are hazardous wastes and hence banned from SW landfill disposal -- but not banned from HW disposal. There are many more materials that are deserving of consideration for a mechanism to provide end-of-life recyclability even though they are not hazardous nor banned from SW disposal. Plastics, styrofoam containers, etc. are just a couple of examples that could still benefit from some of the producers responsibility concepts you have identified.
- I did not see the concept of "internalizing externalities" as a key concept in the paper -- i.e., the costs of post-consumer management are not factored into the cost of the product when originally sold. Even conservative laissez-faire economists, such as Milton Friedman, have acknowledged that the internalization of externalities is a perfectly legitimate function of government.
- Fee/Tax Collection Point. Another place where fees or taxes are collected is at the Point of Generation (POG) as opposed to the Point of Disposal (POD). For example, the California HW disposal fee is a POD fee, but the California HW generator fee is a POG fee that must be paid by the generator regardless of whether the waste is recycled or disposed.
- I'm not sure it is appropriate to recommend one type of financing structure for all EOL commodities. As we know from the myriad of programs that have developed in CA, no one model seems to work (or fit) for all. I would maintain maximum flexibility. The California Bottle Bill and E-waste programs are external fee based and government run -- and they appear to be very successful programs. I would hope you are not suggesting that these programs be converted over to something different.
- Attempts to define one over-arching system for all materials have not gone well. The last attempt was a Tellus study in the early 1990s that recommended an ADF (or ARF) on a wide range of materials -- DOA.

- Throughout the report you use the term "ban from disposal" or "banned from landfill disposal". I don't believe that any of the items you discuss are totally banned from disposal. Most are still eligible for disposal in HW landfills. Some hazardous liquids, such as paints, can still be disposed if treated to remove the liquid characteristic.

*Chuck White, Director  
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*From Everyday Collection to Environmental Protection  
Think Green, Think Waste Management !*

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