

# WHITE PAPER ON ELECTRONICS END-OF-LIFE MANAGEMENT

## Implementation of an ARF-Financed and Stakeholder-Managed System

Prepared by

Electronic Manufacturers' Coalition  
for Responsible Recycling

February 2005

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## Introduction

The Manufacturer's Coalition for Responsible Recycling (Coalition) is a group of electronics companies that have come together out of a belief that the Advanced Recovery Fee (ARF) is the best approach to financing management of end-of-life electronics at the state and national levels. Coalition companies include major manufacturers in the consumer electronics sector including the major manufacturers of televisions, as well as personal computer and monitor manufacturers/sellers such as IBM, Sony, Sharp, Panasonic, JVC and Samsung.

The Coalition companies have been active participants in the development of end-of-life management systems in Europe, Japan and elsewhere, each with different conditions and stakeholder interests. The Coalition members are committed to developing the best system for the U.S., and many were active participants in the National Electronic Product Stewardship Initiative (NEPSI) dialogue. Also, many have provided funding for collection events and other pilot initiatives. While Coalition members continue to prefer a national resolution to this issue, the inability to reach agreement on a national system leads us to propose a system for implementation at the state level that will work effectively and can transition to an eventual national system.

*This paper describes an ARF-financed recycling system for electronic products that is managed by a shared responsibility framework and designed for state implementation. This proposal is modeled on the system developed in the NEPSI dialogues.*

**Part 1** describes the proposed system including its benefits and drawbacks.

- 1.1 Background
- 1.2 Summary of the Proposed System
- 1.3 Primary Benefits and Drawbacks
- 1.4 Detailed Description, including Recommended State Implementation Provisions

**Part 2** provides the Coalition's view of producer responsibility.

**Part 3** concludes and summarizes the main arguments.

**Part 4** will consist of attachments to provide greater detail on special issues. They are not attached to this document and are available upon request.

- 4.1 Model state legislation
- 4.2 Status of the NEPSI Dialogue and the NEPSI Model
- 4.3 Responses to Critiques of the ARF Approach
- 4.4 The Private Third-Party Organization – Rationale and Implementation Details
- 4.5 EPEAT – Incentivizing Environmental Design through the Market
- 4.6 Performance Measures

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## Part 1 The ARF Financed, Stakeholder Managed System

### 1.1 Background

The Manufacturers Coalition believes that an ARF-financed system with active stakeholder management, as broadly outlined in the NEPSI dialogue, provides a sound basis for moving forward, both at the national and state levels, with an efficient and effective system for collection and recycling of electronic products. *This paper presents the Manufacturers' Coalition's model for state-level implementation of an electronics recycling system.*

State-level action is not the ultimate solution – this is a national challenge that should be addressed at that level. However, states can contribute to a national solution by adopting legislation that includes essential consistent elements and defers to a national solution when implemented.

### 1.2 Summary of the Proposed System

The underlying principle of the Coalition's proposal is that the stakeholders in the electronics' chain of commerce should manage the end-of-life system, and that stakeholders' responsibilities should be proportionate to their ability to implement and affect the system. This is the principle of *shared responsibility*.

- It places manufacturers in a key role as the primary managers of the recycling infrastructure through governance of the management entity.
- Consumers provide system funding through paying the ARF, and they discard their end-of-life products at appropriate collection stations.
- Retailers and manufacturers that sell their products directly collect the ARF from the consumer and remit it as directed.
- Recyclers compete to provide environmentally responsible collection and processing.
- Government provides leadership by helping assure that all stakeholders perform their duties and the rules are followed.
- Manufacturers, retailers, recyclers, and municipal governments voluntarily participate in collection of products, and are reimbursed for these activities from the ARF.
- All stakeholders share responsibility to educate and inform the public.

The model developed in NEPSI<sup>1</sup> proposes *a hybrid financing system* whereby an initial system builds an infrastructure and cleans out historic product, and a future system can be instituted when these challenges have been surmounted. Financial support for the initial system is provided by an *Advanced Recovery Fee (ARF)* – a visible fee paid by consumers at the point of sale.

The ARF is collected on retail sales of all PCs, monitors, TVs and large peripherals. While the NEPSI product scope includes only products that are sold to the public (residents) and small businesses or organizations, the Coalition sees benefits to including products that are sold to large commercial and institutional customers, that is, all sales.

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<sup>1</sup> See section 1.4 for details on the NEPSI model. This is a greatly simplified introductory description.

Note that this is *not a traditional ARF* that is run by government. The ARF in this system simply provides funding, in an efficient and equitable way, while the system is structured so as to assure that management responsibilities are shared by stakeholders.

Unlike a traditional ARF, the collected *funds will be managed by a private third-party organization* (TPO). This organization will have a multi-stakeholder governance structure with majority industry participation. The TPO will use *competitive contracting* to manage end-of-life products. A portion of the funds, the *Collection Incentive Payment*, will pay for local collection so these costs are not left on government's back.

*At the appropriate time in the future the ARF may no longer be needed, or it may be determined that an alternative financing system is more appropriate.* The NEPSI proposal called for an eventual transition to partial cost internalization (PCI) based on government taking responsibility for collection, and manufacturers taking responsibility for recycling. However, the NEPSI stakeholders were never able to fully describe the design of a partial cost internalization system and how it would work in practice. The Coalition proposes a thorough stakeholder re-evaluation of the recycling system at a time-certain, with all options being on the table. This paper will not discuss the options at this time.

The system, based on NEPSI documents, includes several other essential elements:

- A set of *interim actions* to be taken after an agreement is reached but before legislation puts the ARF-system in place.
- A definition of *Base Service Level* that assures a consistent set of basic services, while providing local flexibility.
- *A diverse collection network*, made viable by funds from the ARF, that builds on existing businesses and facilities to provide convenience to the public.
- *A materials processing system* that is made cost-effective through competition and economies of scale.
- Numerical *performance measures* for collection and processing.
- *Standards for environmentally sound recycling* that are enforced through contracting procedures.
- *A program to develop markets* for recovered products and materials that builds toward long-term self-sustainability.
- Governing principles that assure a *level playing field* and *uniformity*.

NEPSI achieved consensus agreement on these elements, though detailed work is still needed to complete some documents. But in the NEPSI system there was *a missing piece – an alternative financing mechanism* that would allow, within the ARF structure, certain manufacturers to benefit from their initiatives to design more easily recycled products and to create internal recycling infrastructures by taking individual responsibility for the collection and recycling of their products. This was assigned to industry negotiators to develop.

The Manufacturers' Coalition believes there is a simple solution to this problem. Manufacturers that chose to establish their own collection and recycling systems should be free to do so, and they should be compensated for their actions by the TPO in the same manner as other collectors and recyclers. If their collection and recycling processes are more efficient, the marketplace will reward them.

### **1.3 Primary Benefits and Drawbacks of the Coalition Proposal**

A chief advantage of the ARF-based financing approach is that, in having earned consensus support of the NEPSI stakeholders, it is far more implementable than any alternative approach. No other approach has been so thoroughly developed, nor been subjected to the extensive negotiations and mutual compromises by the diverse array of stakeholders represented.

Despite early misgivings about an ARF by many stakeholders, the Coalition supports this approach because it incorporates the contrasting interests of many diverse stakeholders into a well-balanced, functional whole. It has been thoroughly vetted to create a practical, efficient and effective system.

The immediate challenge that we face is to build and finance a collection and processing infrastructure that will manage the substantial backlog of historic product. The ARF offers the simplest, most straightforward, and most cost-effective approach to meet this challenge. It provides a predictable source of funds, pays for all returned products, adheres to principles of environmentally sound management, provides convenient collection opportunities, and does not place a financial burden on local governments.

#### **Benefits of the ARF-Based Approach**

- The ARF is a visible to the consumer. That delivers an educational message that consumption implies environmental and economic impacts at end-of-life, and that old products should be returned for reuse and recycling.
- The ARF system will not burden local governments with the costs of collecting and transporting products, since those costs are covered.
- The ARF provides a consistent and adequate source of funds for recycling of historic and orphan<sup>2</sup> products.
- The system will build efficiencies and economies of scale in the infrastructure through competitive contracting.
- The system will maximize local reuse, as described in Section 1.4.4.
- In contrast to internalized costs, which are taxed and marked up (typically 30 percent or more), the ARF cannot be marked-up by retailers nor have sales taxes applied.
- The ARF maintains a level playing field in the market because it is equitable for all products and sellers, and it offers the least opportunities for manufacturers and others to escape their responsibilities.

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<sup>2</sup> Orphan products are those for which the manufacturer or successor is no longer in business. Some alternative financing systems do not pay for orphans, or they leave them to government, or they have a formula to apportion the costs.

- The system will directly engage manufacturers in managing the end-of-life system through participation in the TPO.
- When implemented at a state level, the ARF-based system will most readily transfer to a national system when it emerges based on the NEPSI model.

While the Electronic Manufacturers Coalition supports the ARF-based financing approach, we realize that a number of concerns have been raised regarding the system. The Coalition believes that there are answers and/or fixes to these perceived drawbacks.

### **Identified Concerns about the ARF System And Methods to Address those Concerns**

1. Enforcement on remote sales – by Internet, catalogue or phone– may be difficult for states.
  - California has addressed the remote sales problem in their legislation by ensuring that any sellers of electronic products that do not collect and remit the fee will be ineligible for government procurement. This is a powerful incentive for remote manufacturers to collect and remit the fee on direct sales. In fact, major manufacturers who sell via the Internet voluntarily collect the California ARF.
  - Moreover, enforcement is a concern with virtually all financing approaches. It will be difficult to force a remote manufacturer to develop and implement a collection and recycling system. Overall, the Coalition believes that the ARF will result in the highest level of compliance.
2. It is claimed that a flat fee on all products lacks any direct incentive for improved environmental design.
  - In the Coalition model manufacturers will participate in managing the end-of-life system, and will work directly with the problems and opportunities in that system. This experience will provide an incentive to reduce costs by improving environmental design.
  - Additionally, the Coalition proposes requirements for environmental design, such as imposition of the European Union Restriction on Hazardous Substances (RoHS) in states where the ARF model is implemented.
  - Though the cost internalization approach would appear to provide a strong financial incentive for environmental design, the Coalition believes that this incentive is in reality very limited. See Section 1.4.12.
3. It lacks the simple, ideological appeal of simply making manufacturers responsible for their own products.
  - Experience has shown that producer responsibility systems are not simple to implement.
  - What the ARF lacks in ideological aesthetics, it makes up for with practical effectiveness.

## **1.4 Detailed Description and Recommended State Implementation**

This section describes the elements of the Coalition model. It also includes recommendations that the Coalition makes regarding state implementation.

### 1.4.1 Product Scope

The product scope includes the list of products upon which the ARF would be levied, and also products for which collection and recycling would be paid for by the system.

- TV/TV Monitors (CRTs and flat panels)
- Stand alone computer CRT and flat panel monitors greater than 9 inches
- Laptop/notebook computers
- CPUs
- Consumer desktop devices (printers and multifunction devices)

In addition to this list, small peripherals such as keyboards, mice, cables and speakers would be paid for by the financing system, but would not carry an ARF.

As opposed to limiting the ARF to sales to households and small business users, as does the NEPSI system, the Coalition sees benefits to including products that are sold to large commercial and institutional customers, that is, all sales. This has several advantages:

- It solves the problem for all sectors of consumers and not just the public/small business sector.
- It avoids confusion about what sales are covered and which are not.
- It avoids confusion about what returned products are covered, and which are not.
- It increases economies of scale and helps to minimize the cost per product.

#### Implications for State Legislation

- Legislation must define the categories of Covered Products. This includes both:
  - A list of products on which a fee will be charged, and
  - A list of products which are eligible to be paid for by the financing system.
- This may be the same list; however some products like smaller peripherals (keyboards, mice, etc.) will likely not carry a fee but would be paid for.
- Legislation should establish which classes of customers will be covered – the public, small businesses/organizations and/or large commercial accounts.

### 1.4.2 Financing Mechanism

State legislation should establish an Advanced Recovery Fee<sup>3</sup> to be charged on all covered products, whether sold locally or via remote sales, such as the Internet, phone or catalogue sales. The fee should be adequate in order to cover the costs of collecting, transporting and processing all products that are returned into the system.

The ARF should be kept at a level that is just adequate to pay for the quality and breadth of services needed to meet the system performance goals and assure environmentally responsible management. It is proposed that the fee have a cap, which is estimated to be approximately \$10. It should have a mechanism to be lowered over time since it is believed that the maturing of the infrastructure will lower system costs.

The ARF should be variable by product type, so that any one product type covers its own costs, and some product types do not cross subsidize other product types. Televisions are likely to be more costly to recycle, especially since old console TVs add considerable cost.

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<sup>3</sup> The ARF is basically an “advanced user fee” since the beginning-of-product-life leads eventually to the end-of-life.

### Implications for State Legislation

- Legislation should specify that the fee will be collected by the seller (retailer) at the point of retail sale for all sales in the state, whether by local retail establishment or by a remote seller.
- The fee must be remitted by the seller to a designated authority, such as to a department of revenue, to a dedicated trust fund, or to a designated organization.
- The seller should be permitted to deduct a specified percentage of the fee for administrative costs, e.g. 3 percent.
- The fee should be capped. A \$7-8 cap should be adequate, but a higher cap, not to exceed \$10, may be prudent.
- There should be a mechanism to adjust the fee to cover system financial needs, though not to exceed the cap.
- The fee on each product category should cover the costs for that product type, depending on the costs to collect and recycle.
- There should be a safeguard to prevent the monies generated by the ARF from being used for general government purposes.

### 1.4.3 Fund Management

The management of the ARF money, including paying for collection and recycling services, is one of the more complex aspects of the system. NEPSI stakeholders worked on creative ways to manage the funds to assure maximum efficiency, to protect the fund from being raided for other purposes, and to engage stakeholders in realizing the ongoing success of the system.

**Models for Fund Management** Two very different models have been proposed for fund management, and each has been implemented in different settings.

- **Government-managed system** – Under California SB 20 the fee is passed into a State fund and the CA Waste Management Board provides funding for recycling services.
  - Pros
    - It is relatively simple to establish and there are many precedents.
  - Cons
    - Funds are not protected from diversion for general government uses.
    - Governmental contracting has constraints on how funds are spent, which can significantly increase system costs.
    - Government overhead costs can be relatively high.
    - Government lacks strong incentives to constrain system costs.
- **Private TPO-managed system** – Under the NEPSI model and the Coalition’s proposal, a private third-party organization (TPO)<sup>4</sup> is formed, under multi-stakeholder governance, but with significant representation of manufacturers. The TPO is a non-profit business entity that contracts for recycling services, assures environmentally sound recycling, manages data on system performance, is responsible for meeting performance goals, and handles other management functions. See also the Part 4 attachment for more detail.
  - Pros
    - This system will protect the fund from being diverted for other purposes.

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<sup>4</sup> Other names for equivalent organizations include: “Not-for-Profit Corporation”(NFPC), “Electronic Stewardship Association” (ESA), and “Producer Responsibility Organization” (PRO).

- It engages the stakeholders, especially manufacturers, in managing the end-of-life system, incentivizing improvement in environmental design.
  - Stakeholders share an incentive to constrain system and administrative costs because they have an incentive to keep the ARF as low as possible.
  - A private TPO, operating under public oversight, can use more efficient and effective business practices in contracting and performance monitoring.
- Cons
    - It can be more difficult to establish.
    - There are few precedents for such a system in the U.S., although many exist in Canada and Europe.

The privately-managed system was preferred by NEPSI stakeholders over a government-managed system for several reasons.

- It would greatly reduce the burden on government. New governmental programs should not have to be created if private enterprises can deliver the desired services.
- It engages manufacturers directly in the management of the system.
- It helps bridge the present disconnect between product design and end-of-life management by providing information to manufacturers to improve design for recycling.
- It helps protect the fund from being raided by government for other purposes.
- The recycling infrastructure is a business system and can be more efficiently managed by businesses than by government.

**Alternative Approaches for Forming a Private TPO** There is much to learn about the best way to organize a private non-profit organization that would use legislatively approved funds to run the end-of-life system. Some pilot projects<sup>5</sup> are currently being initiated to increase our understanding about these questions. See additional information in an attachment to this document.

There are three different ways that such organizations can be formed. The first is a voluntary initiative by industry:

1. ***A Voluntarily Initiated Organization*** Manufacturers can group together to form a TPO in the absence of any governmental requirements. This model has been implemented in Canada, Europe and Australia. It is often done in anticipation of, and as an attempt to influence legislation.

This model is currently in the early stages of implementation as the National Center for Electronic Recycling (NCER), organized by the MARCEE project of the Polymer Alliance Zone in West Virginia<sup>6</sup>.

The types of services that a voluntary organization could provide are described in Section 1.4.5 on the Interim System. These voluntary initiatives do not include a comprehensive funding method, and so are not seen as the total solution.

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<sup>5</sup> One is a TPO Pilot project in the Northwest with partial funding from EPA and currently seeking further funding from manufacturers.

<sup>6</sup> For up to date information contact Jason Linnell, Executive Director, National Center for Electronics Recycling, Parkersburg, WV, 304-374-8144, [jlinnell@electronicsrecycling.org](mailto:jlinnell@electronicsrecycling.org)

The other two ways of forming a private TPO involve legislation. These generally do include a funding method and so a part of a total solution.

2. ***A Legislatively Established Organization*** The legislation can create a TPO, establishing its membership, structure, duties and funding. This has been done in some Canadian provinces.
3. ***A Legislatively Authorized Organization*** Legislation can define the standards and authorities for a TPO and provide a mechanism for privately initiated entities to be licensed or contracted. Then funding could be disbursed to a licensed TPO, or more than one TPO, for specified services based on the volume of product handled. Generally it is required that the TPO submit a business plan as to how it intends to deliver services for approval by the environmental agency, as well as annual reports.

Option 2 establishes a single, exclusive TPO, which may be able to most efficiently contract for transportation and processing services, but must, as any monopoly, be carefully monitored to avoid inefficiencies. Option 3 can stimulate multiple TPOs, which would compete to secure product from collection entities and process at the lowest cost. The environmental agency could develop a TPO licensing or contracting process that stimulated efficiencies while assuring convenience of service and environmentally sound management.

These approaches are discussed in greater detail in the Part 4 Attachment on Private Third-Party Organizations.

#### **Implications for State Legislation**

The Coalition recommends that state legislation form a private TPO for fund management via either direct legislative establishment or legislative authorization.

- The State needs to decide how it wishes to provide fund management, including the options for TPO formation, and develop their legislation accordingly.
- The TPO should be required to develop and submit a management plan for approval to the state environmental agency that describes how they will contract for services and select contractors, qualification standards and environmental requirements for processors, processor monitoring and auditing procedures, a plan for how performance goals will be met, and methods to provide public education.
- Legislation should require an annual report from the TPO, to be reviewed by the state environmental agency, and the agency should periodically provide a report to the legislature that documents the progress and effectiveness of the system.

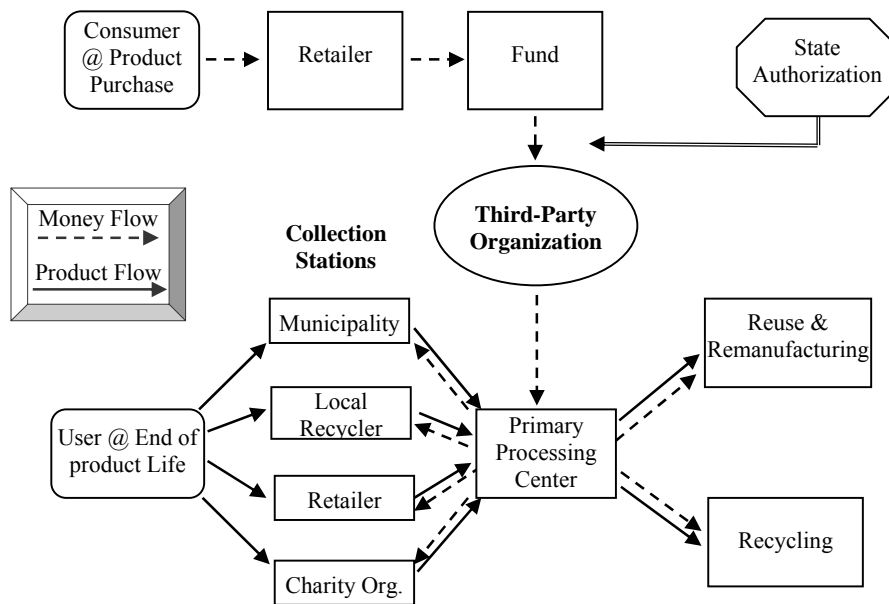
#### **1.4.4 Collection, Transportation and Processing Infrastructure**

The NEPSI model includes guidance about the infrastructure in the document “Base Service Level”. The graphic on the following page depicts how the money and product would flow in the system considered by NEPSI. Variations on this model are feasible and NEPSI did not finalize any specific system.

**Flow of Dollars and Product** The following key principles are important in order to effectively and efficiently manage the collection, transportation and processing infrastructure:

- Services should be provided through competitive contracting.
- The number of contracts should not be too large, for the purpose of management effectiveness and to keep administrative costs to a minimum.
- All product management services should adhere to high standards of environmental and worker health and safety protection.

## Flow of Dollars and Product



**Role of Primary Processors** Contracts for processing and recycling services should be between the TPO and selected regional or local businesses and entities, which may be called Primary Processors. These entities are contracted to provide specific services:

- Receipt of product from collection entities and payment of the Collection Incentive Payment, a pass through payment included in the contract
- Processing the product for shipment downstream
- Securing downstream product management, assuring adherence to environmental standards and tracking the downstream destination of product
- Accounting for product and money and periodic reporting to the TPO.

There are several other services that these entities may provide at their own option, including:

- Triage, sorting and/or processing for reuse – this should be encouraged at either the primary processor or the collection stations
- Dismantling for recovery of components
- Dismantling and/or shredding to separate materials into recycling streams
- Recording of brand information and product serial numbers.

To achieve these principles the ARF-based system should employ competitive contracting, with environmentally sound management standards incorporated into all contracts. Which of these services are provided at a primary processor under contract to the TPO will be a function of the scale, available markets and business model.

**The Collection Network** The network of collection entities should be highly diversified with multiple locations in each community. This enhances convenience to the public. Many different types of entities can provide collection:

- Retailers
- Local computer assemblers (white box stores)

- Electronics manufacturers
- Charities and non-profit organizations
- Local multi-material recycling centers
- Municipal waste collection and recycling facilities
- Waste haulers

There is no intent to require or mandate any of these entities to provide collection. Rather they should be incentivized to do so by covering their primary costs. Then electronics collections can be incorporated into ongoing business models.

Due to the large number of likely collection entities, it may be impractical for the TPO to contract directly with them. Rather, the contracted Primary Processors will, according to terms of their contract, provide pass-through payments of the Collection Incentive Payment to anyone who collects qualifying products from the public. This would likely be a flat amount per pound, though perhaps adjusted for rural collection sites, that will be calculated to cover the costs of a basic collection program. More costly collection efforts can be undertaken – for example on-call curbside pick-up – but the additional costs would be the responsibility of the sponsor. Primary Processors would also pay for transportation of efficient volumes of material from collection sites to their door.

This approach should establish a broad and convenient collection network, but covering the basic costs of collection and allowing any entity to incorporate collection services into their business or operations. It would do so at the most reasonable cost by providing an adequate, but not excessive Collection Incentive Payment.

**How Does Reuse Prosper in this System?** Reuse plays an important role in both the NEPSI national system and the Coalition’s proposed state approach. Encouraging reuse is important for several reasons:

- It captures the highest environmental and economic value of still useful equipment.
- It provides opportunities for local organizations and businesses to incorporate or expand reuse activities, and creates local jobs.
- It reduces system cost by saving on transportation and processing.
- It provides low-cost used equipment to local schools, organizations, communities and individuals, and helps to cross the digital divide.

The Coalition expects that most reuse will be initiated locally by charities, non-profit organizations and small businesses. Contractors under the ARF system will either work directly with reuse organizations, or encourage collection entities from which they receive product to work with such organizations to triage equipment for local reuse.

#### **Implications for State Legislation**

- Legislation should specify qualified costs that will be covered by the ARF, including administration.
- Principles should be spelled out for competitive contracting of services, the establishment of a diverse and convenient collection network, and programs to maximize reuse.

### **1.4.5 Performance Goals**

The primary purpose of performance goals is to measure whether a system is meeting expectations and whether intervention is warranted. Goals should measure the two main parts of the product recovery system – collection and processing/recycling.

- **Collection** There are different approaches to measurement of collection. A numeric goal can measure how effectively product is being recovered from the public in different areas and whether local services to the public should be enhanced. NEPSI recommended that a pounds/capita/year goal should be set for collection based on the achievement of the better-performing, long term collection programs in the US. The goal that NEPSI discussed was 1.75 lbs./person/year. Recent collection programs have exceeded this amount and a higher goal may be considered. In truth, due to the lack of good information about long-term results of collection, any number will be somewhat arbitrary.

Alternatively, in some communities it may be possible to measure the convenience of collection services and the amount of publicity through a more qualitative assessment, which may represent a more direct determination of the quality of the collection effort.

- **Processing/recycling** A numeric goal for processing or recycling measures how effectively recovered product is being managed for reuse or recycling by contractors. NEPSI relied on the goals set by the European program: the rate of component, material and substance reuse and recycling shall be 60 percent by an average weight per product category. This goal will ramp up to 70 percent in 5 years.

Performance goals are a complex subject that is dealt with only superficially here. The Coalition provides more detailed information in the Part 4 attachments.

#### **Implications for State Legislation**

- State legislation should define performance goals for collection and processing/recycling, and direct the state environmental agency to establish and periodically revise numerical goals. Legislation may establish initial numerical goals.

### **1.4.6 Environmentally Sound Management Standards**

Environmentally sound management standards (ESM) for recycling are an essential part of any electronic waste recycling system, since the cheapest way to handle e-waste is not always the most responsible. The U.S. EPA has developed a set of ESM standards, with the intention of creating a verification system, which is one of the most difficult challenges in assuring ESM. The Coalition recommends utilizing these guidelines since it has been reviewed by stakeholders and it will include a verification system. These guidelines are available at:

<http://www.epa.gov/epaoswer/osw/conserv/plugin/pdf/guide.pdf>

#### **Implications for State Legislation**

- State legislation should establish that all recycling paid for under the state program should comply with ESM standards, and delegate the development of such standards to the state environmental agency.
- The state environmental agency should look at the EPA Guidelines and should accept public input in the development of ESM standards. The ability to verify adherence to the standards, especially by out of state or country processors, is essential.

### **1.4.7 Market Development Program**

The development of markets for recovered equipment, components and materials is essential for the economic sustainability of electronics recycling. As the collection system grows, markets for recycled materials must expand to keep pace. Several activities were identified by NEPSI as important to develop markets:

- Requiring manufacturers to report on their use of recovered materials in their products
- Providing research and development grants of new uses of materials.

- Requiring state purchasing of electronic products to require the incorporation of recovered materials in products and/or to offer refurbished equipment using recovered components.

#### **Implications for State Legislation**

- State legislation should direct the TPO to institute a market development program and to spend a portion of the ARF funds on market development, perhaps up to one percent of the available funds.
- State legislation should require manufacturers to report annually on their use of recycled materials in their products.

### **1.4.8 System Re-evaluation**

At an appropriate time in the future the ARF may no longer be needed, or it may be determined that an alternative approach to financing the electronics recycling system is more appropriate going forward. The NEPSI proposal was a “hybrid” financing system that called for an eventual transition from the ARF to a partial cost internalization approach (PCI) based on government taking responsibility for collection, and manufacturers taking responsibility for recycling. However, NEPSI stakeholders were never able to fully describe the exact design of a partial cost internalization system and how it would work in practice.

The Manufacturers’ Coalition shares the commitment to perform a full system evaluation at a definite point in the future, to evaluate if the system is working well, and, if not, to make appropriate changes.

However, the Coalition does not believe that future decision makers can or should have their hands tied by today’s stakeholders. Future stakeholders will have several years of experience and be much wiser. In fact, the future stakeholders may find that the subsidy from the ARF is no longer needed. The system may be self-sustaining:

- The ARF will have built an effective and cost-efficient infrastructure.
- The costly-to-recycle stockpile of old products will have been depleted.
- Value-based markets will have been built for product reuse and material recycling.
- CRTs will be replaced by flat panel displays, reducing one of the main financial burdens.

Moreover, the Coalition believes that the main argument for producer responsibility – to incentivize the reduction of toxics and increased recyclability – will not be as urgent as it seems today. Better environmental design will become increasingly common practice. And this too will lower end-of-life costs. Several factors are moving in this direction:

- Implementation of the RoHS Directive continues to affect product design worldwide.
- The advent of market-based incentives like the EPEAT program will raise the bar for environmental design.
- The increasing flow of information from recyclers to manufacturers through participation in the TPO will enhance the knowledge and sophistication of product designers.

### **1.4.9 Design for Environment Incentives and Reporting**

Within the framework of the ARF system there are a number of opportunities to enhance manufacturers’ responsibilities for end-of-life management and to incentivize improvements in environmental design. This section outlines some proposals that the Coalition would like to see developed in state legislation.

**Compliance with the RoHS Directive** The European RoHS Directive (Directive 2002/95/EC) requires companies to reduce and eliminate a variety of hazardous substances in products. While the Directive's scope is limited to Europe, it is expected that over time, most products sold in the U.S. will comply with the requirements. However, for a period some manufacturing facilities and/or companies may still manufacture products for the North American market that do not comply. For this reason California SB 20 requires compliance with the RoHS directive for products sold in California after July 1, 2007. Other states can do so also. However, an exemption should be provided for substances that are essential to meet U.S. consumer health and safety requirements.

**Manufacturers' Reports on Environmental Design** Manufacturers may be required to provide reports to the state environmental agency that address a number of product design factors. These reporting requirements should be consistent with those in California SB 20, including:

- Estimated contents of certain hazardous substances that are in RoHS-exempt applications
- Estimated amounts of recycled materials contained in covered products
- Efforts to improve products design for recycling.

**Utilization of the EPEAT Rating System** The state should be encouraged to make use of the EPEAT<sup>7</sup> rating system, now under development, in state and local government procurement of electronic equipment. See the Part 4 attachment.

**Provide Data to Recyclers** Manufacturers should be encouraged to provide data and information to recyclers regarding the presence and location of hazardous substances and components contained in electronic products.

**Financial Reward for Environmentally Superior Design** It may be practical, in the future, to develop a method to provide direct financial rewards for environmental design, possibly as a part of the end-of-life financing system. The EPEAT rating system may provide an objective measure of environmental performance. One option may be to provide tax credits for use of recycled materials in products. But these options are difficult to implement fairly and effectively, and they should be addressed after an effective end-of-life system has been put in place.

## Part 2 The Coalition's View on Producer Responsibility

The Coalition is opposed to the implementation of programs that are based on pure producer responsibility.

**What is producer responsibility?** The producer responsibility approach assigns responsibility for financing end-of-life management to the manufacturer. It does so through a mandate that generally prohibits sales of products by manufacturers that do not meet certain requirements. Under this approach, each company that originally made an electronic product, which is presently in the marketplace, would be retroactively responsible for funding its collection and recycling whenever it reaches the end of its useful life.

In some "partial producer responsibility" approaches, the financial responsibility for collection of products may be assigned to local governments. Sometimes government is required to pick up costs for orphan products, which can represent a large portion. Under this approach manufacturers implement a system to pick up products from consolidation centers, and recycle them. A few manufacturers may develop their own system, but the great majority, individually representing a small market share, contract for services through collectives. If manufacturers

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<sup>7</sup> The Electronic Product Environmental Assessment Tool ([www.epeat.net](http://www.epeat.net)) is being designed for use by government and institutional purchasers.

choose to receive back their own brand, then expensive costs of sorting and separate handling must be paid. Generally producer responsibility is simply a means to allocate the financial obligation to companies for managing a stream of products, not their individual brands.

## **2.1 Producer Responsibility is a Government Regulated Mandate**

The idea of producer responsibility is attractive because it sounds so simple – just make producers responsible for their products. But this approach implies laws, regulations and enforcement that mandate companies to fulfill their obligations. The obligations that must be enforced include that financial obligations are met by all manufacturers, recycling services are environmentally responsible and meet performance targets, and pick-ups from consolidation centers are timely and fairly distributed – the tendency to “cherry pick” shipments from population centers must be controlled

Government must ensure that many small and often foreign manufacturers meet their obligations. Enforcement can be expensive, and a lack of enforcement – one of the Coalition’s chief worries – results in an uneven playing field in the marketplace.

## **2.2 Producer Responsibility Skews the Marketplace**

Producer responsibility skews the marketplace by giving advantages to newer market entrants and companies with the largest current market share at the expense of smaller, established manufacturers. It is important to recognize that the vast majority of companies have a very small market share, well down in the single digits, and many are based outside of the U.S.

## **2.3 Producer Responsibility Provides a Weak Design Incentive**

Many advocates for producer responsibility claim that internalization of the costs of end-of-life management will motivate companies to reduce toxics and to improve design for recycling. Unfortunately, this is better in theory than in reality.

First of all, only a few companies will feel the incentive. It is simply not practical for manufacturers to get their own products back from consumers. The vast majority of manufacturers will be forced to work through collective recycling systems, if they participate at all. If product is handled by collectives, it would require expensive brand sorting and separate handling to deliver a direct design incentive.

Moreover, the costs of end-of-life management are simply too small to incentivize much significant design change. The majority of costs are relatively fixed, related to collection, logistics and common processing. Improved environmental design can reduce only a minority of the system costs. And what’s more, those savings will be experienced too many years in the future to have much impact on today’s design choices.

## **2.4 Producer Responsibility is a Poor System Model**

Producer responsibility has several drawbacks as a model to organize an end-of-life management system. For one, nearly all of the extended producer responsibility approaches – such as the great majority of European programs, including the WEEE directive itself – leave the costs for collection on local governments. This is 1/3 to 1/2 of the system cost.

For another, when individual companies go it alone, they develop proprietary arrangements between themselves and recyclers. These arrangements, versus competitive contracting by a TPO,

do not provide a level playing field for recyclers and they can constrain competition in the recycling marketplace, especially for smaller local companies.

The most difficult and costly challenge in an end-of-life system is to build a functioning logistics network that aggregates and transports large quantities of product to recyclers. Individual proprietary arrangements for these services will miss economies of scale and efficiency.

**Relative Costs** There is much debate about which system is more costly. Advocates of each side claim that their system is the cheapest and most efficient. Only one independent study<sup>8</sup> has been done to our knowledge that looked at costs. Following are a couple key points from that study:

- In fee systems with a TPO, administrative costs seem to be reasonable, ranging from 3.5% to 7.5%, depending on how much auditing and monitoring is done of recyclers.
- Costs being paid by ARF-based programs for transportation and recycling are reasonable by U.S. standards, between 20 and 37 cents per pound.

## **2.5 Individual Responsibility Should be Encouraged**

The Coalition applauds initiatives by companies that have voluntarily established programs for collection and recycling of electronic products. When manufacturers are willing to set up their own return logistics system and contract for recycling, they should be rewarded. The Coalition companies, too, have provided considerable voluntary support to jump-start the end-of-life infrastructure through providing funds for pilot efforts by local governments and others.

The challenge is to build a system that accommodates both the interests of many manufacturers to build a collective infrastructure and the interests of a few who wish to go it alone. Under the ARF system, individual companies can receive compensation for the recycling they provide. In some cases they can establish their own independent TPO. The Coalition believes that the interests of those who wish to operate independently can be accommodated within an ARF system.

## **Part 3 Conclusion**

The members of the Manufacturers' Coalition stand ready to work with any state that wishes to implement an ARF-based financing system to manage end-of-life electronics. The Coalition has developed model legislation and will provide support to address particular issues needed to work within existing state law. Coalition manufacturers will then help establish the private third-party organization that will run the system, entailing the least burden on government and avoiding creation of a new bureaucracy.

The system we propose is based in part on the thorough work of NEPSI. The system uses every means possible to minimize costs to the public – employing competitive contracting for services, working with existing businesses and organizations, incentivizing product design improvements to lower recycling costs, encouraging an extensive collection network to improve economies of scale, etc.

The attempt to reach full agreement nationally is stalemated, but the problem of electronics waste management remains unsolved. Meanwhile, states can take a positive step to address the e-waste challenge by adopting legislation that includes the essential elements in this document, and that defers to a national solution when implemented.

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<sup>8</sup> “Study into European WEEE Schemes”, prepared for the UK Department of Trade and Industry by Energy Futures Solutions, November 2003.