FINANCING AND INFRASTRUCTURE MINI-MATRIX

Desired Attributes (no priority explicit or implied in order below)	"Ideal Model"	Switzerland (SWICO)	Norway
Effective Collection: Large volumes of used electronics are collected. There is a means to track progress. The system is convenient for consumers and consumers have incentives to return.		1. 2000 activity report **(need to get)** 2. No numerical targets. 2. Consumers required by law to return products.	**1. Any data on effectiveness?** 2. No specific consumer incentives
Responsibility for Payment and Handling is Shared and Roles are Clear: Institutions are formed and roles assigned. How costs and burdens are shared is clear.		1. Consumer pays visible ARF at point of purchase to cover all costs. Consumer returns product to retailer or gov't. 2. Retailers collect. $ goes to PRO to pay all costs. 3. Munis collect too. 4. Producers set up PRO to manage funds and product handling.	1. Consumers return products to retailers or government. 2. Retailers collect old for new. 3. Munis collect too. 4. Producers/importers set up PRO and pay fee to PRO (based on current market share) that covers all costs.
Orphans covered: Costs of collecting and recycling orphan share (producer no longer exists) covered in fair and reasonable manner.		ARF covers orphans	Producer fees cover orphans
Historical covered: Costs of historical waste (older products whose producers still exist) covered in fair and reasonable manner.		ARF covers historic	Producer fees cover historic
Sound Reuse & Recycling: More reuse, remanufacturing and recycling/less disposal. Legitimate end markets for collected electronics/ recycled materials. Environmentally sound recycling.		PRO certifies recyclers (**what criteria used?)**	Recycling defined by legislation. Recyclers licensed by government. Reuse exempt from treatment statutes
Incentives for Design: Financing system rewards environmental design or parallel market-based mechanism rewards green design		Only OEMs and dealers can remove/reuse parts, leading (?) to disassembly improvements	Not as part of financing, takeback system. Side agreements with industry to reduce WEEE **(elements of??)**
National impact/no free riders: National policy instrument ensures cross- boundary impact and can enforce against free riders. Is there legislation or other implementing agreement; what does it cover?		National backdrop legislation added later. Government enforces against free riders.	National backdrop legislation. Government enforces against free riders.
Economic Incentives in System Drive Economic Efficiency and Achievement of other Desired Attributes: System attains desired goals in most cost-effective manner. System is flexible and adaptable to ensure continued improved efficiency.		ARFs cover all costs. ARFs set by PRO to based on costs of program. Fees reduced 2x.	Producer fees based on current market share cover all costs. Fees set by PRO based on costs of program.
Effective Consumer Education		**Need more info**	**Need more info**

Desired Attributes (no priority explicit or implied in order below)	"Ideal Model"	Dutch 1: White/Brown Goods	Dutch 2 - IT Equipment
Effective Collection: Large volumes of used electronics are collected. There is a means to track progress. The system is convenient for consumers and consumers have incentives to return.		1. Decree requires notification of takeback plans to Ministry. 2. 2000 results reported Target for TVs: 69% Actual Recovery: 78% 3. Landfill ban.	1. Decree requires notification of takeback plans to Ministry. 2. OEMS propose recovery targets for gov't approval. 3. Registration system set up for reporting processing statistics to Ministry.
Responsibility for Payment and Handling is Shared and Roles are Clear: Institutions are formed and roles assigned. How costs and burdens are shared is clear.		1. Consumers pay visible ARF (if charged) which covers all costs and return product to muni or retailers. 2. Retailers must accept old for new till 2005. Reimbursed by PRO for costs. (10% of collections) 3. Munis collect too (90% of collections). 4. Producers/importers set up PRO. They pay costs of handling product unless the ARF is passed down to consumer (producer's choice).	1. Consumers return products to retailers or munis. 2. Retailers collect old for new (95%). 3. Munis collect too (<5%). 4. Producers pay PRO fees to cover transport and recycling based on how many of their discarded products are collected for processing.
Orphans covered: Costs of collecting and recycling orphan share (producer no longer exists) covered in fair and reasonable manner.		ARF covers orphans	Orphans covered by xtra charge to producers. (25% of recovered products are orphans)
Historical covered: Costs of historical waste (older products whose producers still exist) covered in fair and reasonable manner.		ARF covers historic	Producers cover costs of their own historic products
Sound Reuse & Recycling: More reuse, remanufacturing and recycling/less disposal. Legitimate end markets for collected electronics/ recycled materials. Environmentally sound recycling.		PRO contracts with recyclers. No special guidelines or reqm'ts for recycling	Approved processing plants do the recycling. Gov't requires reuse estimate as part of annual reporting.
Incentives for Design: Financing system rewards environmental design or parallel market-based mechanism rewards green design		Not as part of financing, takeback system. Shift to brand-related takeback in 2005 **(need more info)**	Producers pay for recycling their own products(based on weight and cost of recycling) which may provide incentive for better design to reduce recycling costs
National impact/no free riders: National policy instrument ensures cross- boundary impact and can enforce against free riders. Is there legislation or other implementing agreement; what does it cover?		National backdrop legislation mandating takeback. Details negotiated by ind. & gov't. Free riders not big issue; > 95 percent of producers/importers are PRO members.	National backdrop legislation. Details negotiated between industry and government.
Economic Incentives in System Drive Economic Efficiency and Achievement of other Desired Attributes: System attains desired goals in most cost-effective manner. System is flexible and adaptable to ensure continued improved efficiency.		ARFs cover all costs. ARFs may be passed onto consumers visibly. ARFs set by PRO based on costs of program.	Producers pay for the costs of recovering their own products (with upcharge to cover orphan products).
Effective Consumer Education		PRO has authority to promote system.	**Need more info**

Desired Attributes (no priority explicit or implied in order below)	"Ideal Model"	Sweden	Japan
Effective Collection: Large volumes of used electronics are collected. There is a means to track progress. The system is convenient for consumers and consumers have incentives to return.		No required recycling target. No data yet on performance.	Different recovery rates for product categories; range between 50-60% by weight. Collected 2.5 m products in 1st 3 mos.
Responsibility for Payment and Handling is Shared and Roles are Clear: Institutions are formed and roles assigned. How costs and burdens are shared is clear.		1. Consumer pays visible or invisible (depending on sector) fee at purchase and returns product to either retailer or muni. 2. Retailer accepts old for new. 3. Muni collects products from those not purchasing new; pays for this collection itself. 4. Producers accept old for new. Producers set up PRO which arranges for collection and processing from retailers and munis.	1. Consumer returns product to retailers or local gov'ts and pays an EOL fee to cover all costs. **[CHECK]** 2. Retailers collect (80%). 3. Munis collect too (20%). 4. Retailers and munis transport products to producers who are responsible for recycling their own products. PROs manage this process. Producers set EOL fees for their own products.
Orphans covered: Costs of collecting and recycling orphan share (producer no longer exists) covered in fair and reasonable manner.		Covered on old-for-new basis.	Consumer EOL fee covers orphans
Historical covered: Costs of historical waste (older products whose producers still exist) covered in fair and reasonable manner.		Covered on old-for-new basis.	Consumer EOL fee covers historic
Sound Reuse & Recycling: More reuse, remanufacturing and recycling/less disposal. Legitimate end markets for collected electronics/ recycled materials. Environmentally sound recycling.		PRO selects recyclers. Recyclers licensed by gov't.	Producers manage recycling.
Incentives for Design: Financing system rewards environmental design or parallel market-based mechanism rewards green design		**Need info**	Manufacturers compete to lower EOL fee (with some effect on design).
National impact/no free riders: National policy instrument ensures cross- boundary impact and can enforce against free riders. Is there legislation or other implementing agreement; what does it cover?		National backdrop legislation; gov't enforces against free riders; reporting reqmts for producers, retailers, importers	National backdrop legislation; government enforces against free riders; reporting requirements for producers
Economic Incentives in System Drive Economic Efficiency and Achievement of other Desired Attributes: System attains desired goals in most cost-effective manner. System is flexible and adaptable to ensure continued improved efficiency.		**Need info on how costs allocated to producers if not covered by consumer ARF**.	Consumer pays fee at EOL; producers set EOL fees for their own products and compete to lower these fees.
Effective Consumer Education		**Need Info**	**Need Info**

Desired Attributes (no priority explicit or implied in order below)	"Ideal Model"	Taiwan	Best Buy
Effective Collection: Large volumes of used electronics are collected. There is a means to track progress. The system is convenient for consumers and consumers have incentives to return.		**Need info on any goals, reporting, consumer incentives**	Collection results reported. 250,000 items recovered to date. Consumer incentives under consideration.
Responsibility for Payment and Handling is Shared and Roles are Clear: Institutions are formed and roles assigned. How costs and burdens are shared is clear.		1. Consumers return products to gov't collection points. 2. Retailers not involved. 3. Munis collect and are reimbursed by nat'l gov't. 4. Producers pay fees to government to cover collection and recycling.	1. Consumer returns product to retailer; in some cases, pays EOL fee (e.g., CRTs). 2. Retailer accepts product returns; retailer may share share recycling costs not covered by EOL 3. Munis not involved 4. Producers may assist retailer in covering costs not covered by EOL.
Orphans covered: Costs of collecting and recycling orphan share (producer no longer exists) covered in fair and reasonable manner.		Producer fees cover orphans	Orphans covered by retailer
Historical covered: Costs of historical waste (older products whose producers still exist) covered in fair and reasonable manner.		Producer fees cover historic	Historic covered by retailer
Sound Reuse & Recycling: More reuse, remanufacturing and recycling/less disposal. Legitimate end markets for collected electronics/ recycled materials. Environmentally sound recycling.		Local government selects recyclers from certified recycler roster	Retailer chooses recycler
Incentives for Design: Financing system rewards environmental design or parallel market-based mechanism rewards green design		**Need info**	None
National impact/no free riders: National policy instrument ensures cross- boundary impact and can enforce against free riders. Is there legislation or other implementing agreement; what does it cover?		Legislation authorizes government management and enforcement.	Voluntary; no national legislation or coverage.
Economic Incentives in System Drive Economic Efficiency and Achievement of other Desired Attributes: System attains desired goals in most cost-effective manner. System is flexible and adaptable to ensure continued improved efficiency.		Government pays for system out of fees assessed to producers**.** Fees based on recycling costs.	Consumer pays EOL for some products; retailer covers costs of other products or shares with producers.
Effective Consumer Education		**Need Info**	Retailer conducts outreach

Desired Attributes (no priority explicit or implied in order below)	"Ideal Model"	Australia-Cell Phone	RBRC (ni-cads)
Effective Collection: Large volumes of used electronics are collected. There is a means to track progress. The system is convenient for consumers and consumers have incentives to return.		Recovery targets set by industry: 25% by 2002; 50% by 2004.	2000 target: 4.4 m lbs. 2001: 70% collection State reports show recovery results mixed.
Responsibility for Payment and Handling is Shared and Roles are Clear: Institutions are formed and roles assigned. How costs and burdens are shared is clear.		1. Consumers return product to retailers free of charge. 2. Retailers collect used product 3. Munis 4. Producers pay fees based on mkt. share to cover all costs to PRO. Fee covers all costs. PRO manages recycling.	1. Consumers return to retailers or local governments. 2. Retailers collect. 3. Munis: New effort to enlist local governments to collect. 4. Producers pay fees to PRO based on market share to cover all costs. PRO manages all logistics.
Orphans covered: Costs of collecting and recycling orphan share (producer no longer exists) covered in fair and reasonable manner.		Producer fees cover orphans.	Orphans covered by producer fees.
Historical covered: Costs of historical waste (older products whose producers still exist) covered in fair and reasonable manner.		Producer fees cover historic.	Historic covered by producer fees.
Sound Reuse & Recycling: More reuse, remanufacturing and recycling/less disposal. Legitimate end markets for collected electronics/ recycled materials. Environmentally sound recycling.		**Need info**	PRO designates one recycler to handle all batteries.
Incentives for Design: Financing system rewards environmental design or parallel market-based mechanism rewards green design		None	None
National impact/no free riders: National policy instrument ensures cross- boundary impact and can enforce against free riders. Is there legislation or other implementing agreement; what does it cover?		No backdrop legislation. MOU between producers and PRO. No significant free rider problem.	National legislation facilitates, but does not mandate collective producer responsibility. No government enforcement against free riders.
Economic Incentives in System Drive Economic Efficiency and Achievement of other Desired Attributes: System attains desired goals in most cost-effective manner. System is flexible and adaptable to ensure continued improved efficiency.		Producers pay all costs based on current market share.	Producers pay all costs based on current market share
Effective Consumer Education		National promo campaign to incentivize consumer returns	PRO funds consumer education campaign.

Desired Attributes (no priority explicit or implied in order below)	"Ideal Model"	B C Product Care	Lead-Acid Batteries
Effective Collection: Large volumes of used electronics are collected. There is a means to track progress. The system is convenient for consumers and consumers have incentives to return.		No specific targets to meet. Collections reported annually to province. PRO responsible for making sure collection depots are reasonable convenient to consumers.	93.3% recycling rate for lead-acid batteries. Consumer has to pay deposit unless he returns an old battery. Disposal ban.
Responsibility for Payment and Handling is Shared and Roles are Clear: Institutions are formed and roles assigned. How costs and burdens are shared is clear.		1. Consumers pay visible ARF at purchase; return used products to collection depots. 2. Retailers collect ARF and send to PRO. 3. Munis operate drop-offs; reimbursed by PRO 4. Producers set up PRO; PRO manages funds and handles logistics of collection, recycling.	1. Consumers pays deposit on first purchase; no additional cost if used product returned. 2. Retailers accept returns and deposits. Keep unclaimed deposits to cover costs. Sell batteries to recyclers. 3. Gov't sets deposit charge. 4. Producers not involved.
Orphans covered: Costs of collecting and recycling orphan share (producer no longer exists) covered in fair and reasonable manner.		Orphan products covered by ARF.	Retailers required to accept old for new.
Historical covered: Costs of historical waste (older products whose producers still exist) covered in fair and reasonable manner.		Historic covered by ARF.	Retailers required to accept old for new.
Sound Reuse & Recycling: More reuse, remanufacturing and recycling/less disposal. Legitimate end markets for collected electronics/ recycled materials. Environmentally sound recycling.		PRO responsible for choosing recyclers. **Need more info on controls over recyclers.**	No controls.
Incentives for Design: Financing system rewards environmental design or parallel market-based mechanism rewards green design		None	None
National impact/no free riders: National policy instrument ensures cross- boundary impact and can enforce against free riders. Is there legislation or other implementing agreement; what does it cover?		Provincial backdrop legislation; government enforcement against free riders.	Model legislation adopted in many states. Need more info on government role.
Economic Incentives in System Drive Economic Efficiency and Achievement of other Desired Attributes: System attains desired goals in most cost-effective manner. System is flexible and adaptable to ensure continued improved efficiency.		Consumers pay visible ARF which covers all costs.	Lead acid batteries have positive market value which powers high recycling rate.
Effective Consumer Education		PRO pays for outreach/education	**Need Info**

Desired Attributes (no priority explicit or implied in order below)	"Ideal Model"	MA Used Oil	South Carolina Tire Program
Effective Collection: Large volumes of used electronics are collected. There is a means to track progress. The system is convenient for consumers and consumers have incentives to return.		Program proposed only; not yet required by law. Consumers to receive a $.05 per quart incentive to return used oil	These types of programs seem to be collecting large numbers of tires. Disposal bans.
Responsibility for Payment and Handling is Shared and Roles are Clear: Institutions are formed and roles assigned. How costs and burdens are shared is clear.		1.Consumers return oil to designated drop-offs. 2. No retailer role. 2. Government operates dropoffs. 4. Producer pays fee to government to cover collection, recycling and consumer rebate.	1. Consumer pays ARF (which covers all costs) at point of purchase and brings back old tires to retailer. 2. Retailer accepts ARF and old tires. Arranges with processors to take old tires. 3. No muni role, other than to manage old tire piles. 4. No producer role.
Orphans covered: Costs of collecting and recycling orphan share (producer no longer exists) covered in fair and reasonable manner.		Covered by producer fee.	Fees can cover tires abandoned by consumers.
Historical covered: Costs of historical waste (older products whose producers still exist) covered in fair and reasonable manner.		Covered by producer fee.	ARF covers historic.
Sound Reuse & Recycling: More reuse, remanufacturing and recycling/less disposal. Legitimate end markets for collected electronics/ recycled materials. Environmentally sound recycling.		Government manages the recycling	Processors must be registered with state
Incentives for Design: Financing system rewards environmental design or parallel market-based mechanism rewards green design		None	Some funding can be used to encourage use of recycled rubber in tires.
National impact/no free riders: National policy instrument ensures cross- boundary impact and can enforce against free riders. Is there legislation or other implementing agreement; what does it cover?		State-level program. Government enforces.	State legislation establishes and oversees program.
Economic Incentives in System Drive Economic Efficiency and Achievement of other Desired Attributes: System attains desired goals in most cost-effective manner. System is flexible and adaptable to ensure continued improved efficiency.		Producers pay fee into government managed fund to cover collection, transport and recycling	Consumer ARF covers costs of program, with some left over for tire pile cleanup and mkt. development.
Effective Consumer Education		**Need info**	**Need info**

Desired Attributes (no priority explicit or implied in order below)	"Ideal Model"	Pay As You Throw (PAYT)
Effective Collection: Large volumes of used electronics are collected. There is a means to track progress. The system is convenient for consumers and consumers have incentives to return.		EPA estimates 15-28% increase in waste reduction; 32-59% increase in recycling
Responsibility for Payment and Handling is Shared and Roles are Clear: Institutions are formed and roles assigned. How costs and burdens are shared is clear.		1. Consumer pays by the bag or can to dispose of waste. 2. No retailer role 3. Government uses fees to manage waste. 4. No producer role.
Orphans covered: Costs of collecting and recycling orphan share (producer no longer exists) covered in fair and reasonable manner.		Yes
Historical covered: Costs of historical waste (older products whose producers still exist) covered in fair and reasonable manner.		Yes
Sound Reuse & Recycling: More reuse, remanufacturing and recycling/less disposal. Legitimate end markets for collected electronics/ recycled materials. Environmentally sound recycling.		Government chooses recyclers
Incentives for Design: Financing system rewards environmental design or parallel market-based mechanism rewards green design		No
National impact/no free riders: National policy instrument ensures cross- boundary impact and can enforce against free riders. Is there legislation or other implementing agreement; what does it cover?		State-wide or community-specific laws. Government enforces against illegal dumping
Economic Incentives in System Drive Economic Efficiency and Achievement of other Desired Attributes: System attains desired goals in most cost-effective manner. System is flexible and adaptable to ensure continued improved efficiency.		Fee covers some of costs to manage waste; size of fee limited by political considerations in getting approval of fee.
Effective Consumer Education		Municipalities responsible for outreach