



Rechargeable Battery Recycling

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A Model Producer Responsibility
(Product Stewardship)
Initiative

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Background

An Overview of GEC

A 501(c)3 dedicated to partnering with industry and other stakeholders to improve the life-cycle environmental and social performance of electronic products **with a focus on better product design**

Main program is the operation of EPEAT

Also grant research on:

- Product design for EoL management
 - Electronics industry environmental supply chain management
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Electronic Product Environmental Assessment Tool (EPEAT)

A system to help purchasers identify environmentally preferable computers and monitors

The two sides of EPEAT :

1. An American National Standard (IEEE 1680) including environmental requirements and a process for declaring a product's conformance
 2. A Registry – www.epeat.net – of products that meet 1680 and a verification system to ensure credibility
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Rechargeable Battery Recycling

- Why should we recycle rechargeable batteries?
 - After all, they represent a whopping 0.013% of the waste stream
 - The core rechargeable battery chemistry has been Nickel Cadmium (NiCd)
 - Another is small sealed lead acid
 - Toxic metals are increasingly being replaced by Lithium Ion and Nickel Metal Hydride
 - Metals are in increasing demand
 - As demonstrated by historical price highs
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Origins of the Current System

- In 1996 industry organized a national recycling system, Canada included in 1997
 - Facing the threat of state regulation of NiCds
- Rechargeable Battery Recycling Corporation (RBRC) - a non-profit, organization dedicated to recycling rechargeable batteries
 - Nickel-Cadmium (Ni-Cd)
 - Nickel Metal Hydride (Ni-MH)
 - Lithium Ion (Li-ion)
 - Small Sealed Lead (Pb) (*weighing <2lbs*)
- Began collecting cell phones in 2004.





Battery Recycling

- Batteries collected from:
 - Cordless and cellular phones, cordless power tools, laptop computers, two-way radios, battery-powered toys, etc.
- Recycled by INMETCO in Ellwood City, PA
- Cell phones reused and recycled through ReCellular





The Battery Act

- Signed into law in 1996 to:
 - Phase out use of mercury in batteries
 - Provide for efficient and cost-effective collection and recycling or proper disposal of used Nickel Cadmium batteries, Small Sealed Lead batteries, and certain other regulated batteries
 - Establish national, uniform labeling requirements
 - Prohibit the sale of a rechargeable consumer product that contains a regulated battery that is not easily removable
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**PARTICIPATING
RETAIL LOCATIONS**



**USED RECHARGEABLE
BATTERIES FROM PORTABLE
ELECTRONIC DEVICES**



**RECHARGEABLE BATTERIES
RECYCLED**



**NEW BATTERIES AND
STAINLESS STEEL
PRODUCTS ARE
MADE FROM RECOVERED
MATERIALS**

USED CELL PHONES



**CELL PHONES
REFURBISHED
AND RESOLD**



**PORTION OF PROCEEDS
DONATED TO CHARITY**

**PORTION OF PROCEEDS
FUND COLLECTION
PROGRAM AND
PUBLIC EDUCATION**

**CELL PHONES
RECYCLED**



**MATERIALS
RECOVERY/REUSE**



Licensees are Key

- RBRC is funded by the makers and manufacturers of rechargeable batteries and the products containing them. Licensees apply the RBRC Seal on their rechargeable batteries.
 - More than 350 licensees across North America, representing 95% of the portable rechargeable power industry.
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Retailers Provide Collection

- Over 40,000 retail stores throughout the U.S. and Canada serve as battery collection sites.
 - Retail rechargeable battery and cell phone collections includes:
 - Collection containers – boxes and bags with adhesive seal
 - Pre-addressed, pre-paid freight
 - No charge to retailers
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Businesses and Agencies

- RBRC provides free collection containers, freight, processing and recycling to over 5,000 businesses
- And over 6,000 communities and public agencies
 - Some collect at curb





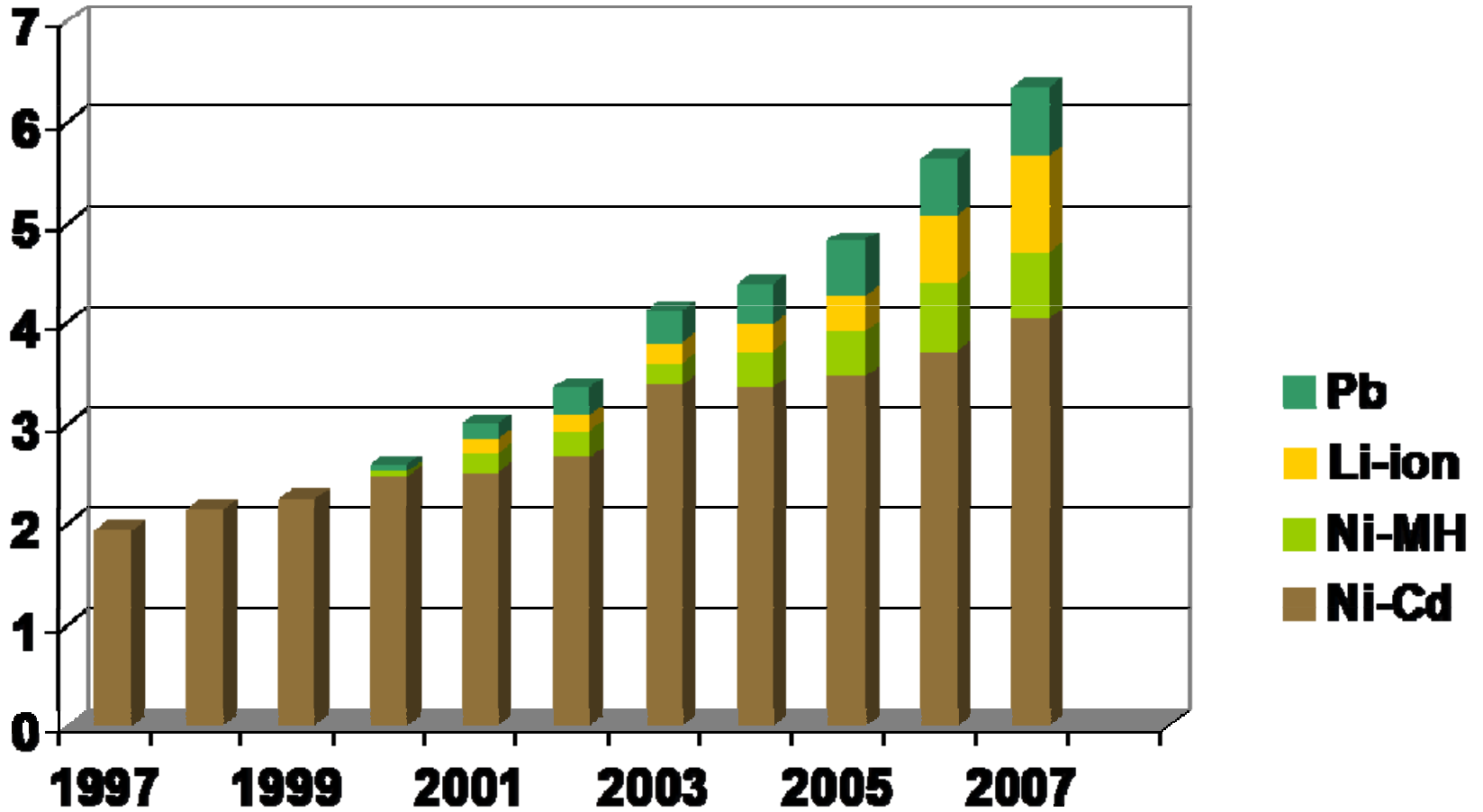
Promotion and Advertising

- www.rbrc.org and www.call2recycle.org provide drop-off site locations
 - Consumer help line averages over 15,000 calls per month
 - Television and radio Public Service Announcements
 - Print ads appear regularly in consumer, trade, and audience-specific publications
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Rechargeable Batteries Recovered

Millions of Pounds





The Measurement Conundrum

- Alternative methodologies
 1. Pounds per year
 2. Recycled / discarded (recycled + disposed)
 3. Recycled / sales
- Recycling rate data points

		<u>Method</u>	<u>Rate</u>
Canada	3	5.6%	
Europe		2	70%
U.S.		2	14%

- Issues
 - Hoarding
 - Technology evolution
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Whatever, Tain't Enough

- What's to do?
 - Recycling is as convenient as can be
 - RBRC spends \$10s mm each year on promotion and advertising
 - And hardly touches consumer awareness
 - Can a team of RBRC and local governments can break through?
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Would a State Law Help?

- CA and NYC have laws that require retailers to collect, and post signage
 - Interest has been expressed for Oregon in 2009
 - Recycling Advocates, DEQ and Metro are now testing local retailer participation
 - And examining Community Based Social Marketing as an option
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Should We Recycle Primaries?

- Are they a hazard in disposal?
 - No toxic metals, but they are caustic
 - Is there a resource value?
 - A little ferrous in the casing
 - Is there a cost (financial, environmental)?
 - Volumes are 9 to 1
 - Will it help participation?
 - Easier message to consumers
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In Conclusion

- RBRC is a strong producer responsibility solution
 - Costs are off local governments' backs
 - Manufacturers are incentivized to improve design
 - But producers cannot be effective recyclers alone
 - It's a partnership, stupid.
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