

Slide 1

Good Point Recycling

*Progress on the recycling?  
Infrastructure and end-markets for e- scrap in the Northeast*

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[www.retoworks.com](http://www.retoworks.com)



[www.good-point.net](http://www.good-point.net) Middlebury, VT

Intro: New England Reuse and Recycling  
Business Model

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1994-2004



'94 Monitors fall TCLP, initially EPA wishes to force infrastructure through threat of law. High Cost, misses household (esp. TVs) entirely.

'97 Massachusetts implements the 'commodity' exemption (so long as potentially reused, not yet a waste, ergo not HW), begins pilot collections at Goodwill, Salvation Army, etc.

'98 Massachusetts funds market research and first statewide processing contract before initiating first waste disposal ban

'99 VT, ME, NH, RI begin to purchase services under MA contract. Number of CRT processors, investments, increase 5X. Volumes increase, competition increases, prices fall.

'01 California implements disposal ban. BAN releases 'Exporting Harm'. EPA applies 'commodity exemption' to raw material as well as reuse/repair. Prices between vendors vary from \$0 to \$0.45 / lb.

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History and evolution of regulations

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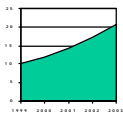
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**Meanwhile**

- World Demand for Electric and Electronic Devices is Rising
  - Disposal and mining
    - vs
  - Reuse and recycling

*China's copper demand has compounded at 20% per year for the past 4 years.*



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World Demand for copper etc. expands,  
driven by Chinese demand

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**Example: the CRT Monitor**

- US demand: 50 million monitors per year
- Chinese demand: 50M monitors per year
- India demand: 50M monitors per year
- % Made in Asia rising every year

Est. USA secondary (used) market is 1:3.  
Est. Asia is 3:1.

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Example: World demand for CRT monitors now as great in China, India as USA (and USA monitors are made in Asia, too)

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**Cost of Consumption**

Gorilla and orangutan extinction is arguably driven by electronics metal mining. One Copper mine in Papua New Guinea (feeding China) dumped 80,000 Tons Per Day of Cyanide tailings into the OK Tedi River from 1990-2000

USGS – At 1990 rate of consumption, all known copper reserves will be exhausted this century. Ocean mining will be the primary source of copper in our lifetimes.

USA Model? 95% from federal lands, \$5/acre, 14/15 largest Superfund sites

Hard rock mining produces 45% of all toxics produced by all USA industries.

E-Scrap is 300% richer in copper and other metals than mined ore

Recycling produces a fraction of the pollution from mining.

**Gold mining releases more mercury than mercury mining and disposal combined!!!**

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Environmental cost of mining is the greatest impact

Gold mining releases more mercury than mercury mining and disposal together

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**Chinese demand in particular drives both recycling and mining**

1. Electric and electronic appliances “made in China”
2. Chinese “New Deal” scale infrastructure development
3. Asia #1 in per capita consumption of gold & platinum (the only materials which the West does not consume most of)

Mining nightmares in Borneo, Chile, Congo, Philippines, Turkey, etc.

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Samples of copper mining impacts: Peru and Papua New Guinea

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**Digital Scrap**

- Over 1,000 parts requests per day via internet parts exchange services (tradeloop.com, pricewatch.com, etc.)
- Contact with over 200 international repair shops via exporters.com.sg, alibaba.com, globalrecycle.net, recycle.net, etc.
- Sales of parts and refurbishment on ebay.com
- Scrap copper, alum, plastic sold directly to end users

The internet has completely changed the secondary parts and scrap market during the past 8 years, lowering the barrier to entry into technical and export markets.

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1000 Parts requests per day

200 repair shops on-line

Internet making it easier for small companies to reach target markets

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**Market Forces ~ Recycling Costs**

Next 3 Slides:

- USA costs currently (1000 monitors)
- USA costs with 1900 copper prices
- USA costs with Chinese labor rates



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What are the real barriers to more USA-based recycling? Some are what you expect, some will surprise you...

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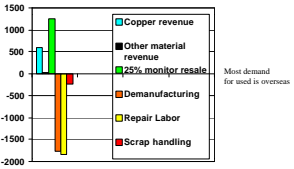


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**Overall USA Monitor Management**  
\$ spent and earned per 1000 monitors



Most decrease for used is overseas

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USA Operation without exports: Income from non-ferrous and resale don't cover cost

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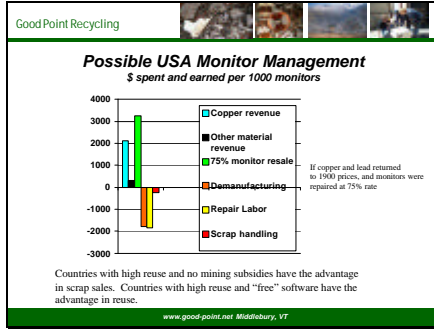


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Same USA Operation – except with 1900 copper prices (before 132 years of General Mining Act), also 75% resale (like overseas tolerance for used products) (Change USA mining policy and we can recycle for free).

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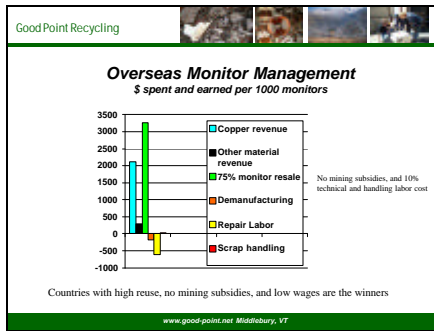


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Same operation, but with Chinese "free market" copper pricing (no GMA 1872) and \$100/month labor.

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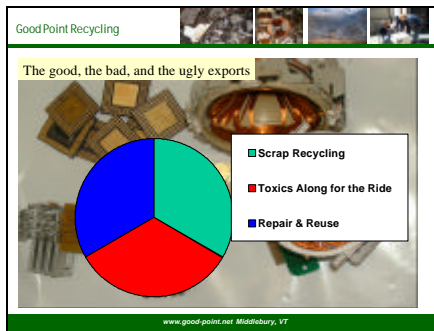


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3 categories of exports – Scrap (for material value), Reuse, and "Toxics Along for the Ride"

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Struggle to keep recycling from embarrassing itself

**REALITY:** If USA exports everything, we send 1/3 reusables, 1/3 recyclables, and 1/3 Toxics Along for the Ride.

**REALITY:** if USA exports nothing, we destroy reusables (and they cannot afford new); they mine to replace the recycled metals, and mining produces even more toxic harm than recycling.

**SOLUTION:** Setting a Higher Standard USA processing, limited exports (tested equipment, copper scrap), simple tests (like CRT Glass Test); market development to promote best practices; (funded) state processing contracts with restrictions and incentives; etc.

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If we export everything, we dump poison  
If we export nothing, mining increases and the "digital divide" increases  
**Solution: Set a higher export standard**

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**Understanding your own supply**

- 1) Pristine takeouts for auction, clean scrap  
- you can deal with anyone directly
- 2) Toxic Junk, Contraband, leftovers  
- you should insist on domestic processing
- 3) "I dunno" ... Mix of good, bad and ugly  
- you should deal with USA company with capacity to separate, process and market, and get documentation

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3 basic categories of electronics takeouts

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**Understanding your own supply**

- 1) Pristine takeouts, off-lease equipment (Reuse material)  
Highly Sorted Working and repairable monitors, P2s+, cords, peripherals, cartridges  
positive revenue  
dollars per item (not pennies per pound)  
high overseas demand, with incentives to hide it from tariff



Working monitors  
-No screen damage  
-No VGA  
-No Apple  
-Make, Model, COM,  
-Year, other tech details

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Off lease equipment used to go to bid, increasingly sent to recyclers (nice stuff)

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**Understanding your own supply**

2) The Dregs:

- Cherry-picked material, TVs, obsolete equipment, residue, shredded or baled material.
- Damaged CRTs
- Pennies per pound
- Overseas demand based on copper, gold and aluminum content



*One USA company sold good stuff to one export market, and (misrepresented) bad stuff to another*

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But most of our volume is NOT reuseable – need domestic markets for the junk

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**Understanding your own supply**

- "I don't know": Then make sure the company you select has capacity to handle either type of E-Scrap.




**"Crapple"**  
One fellow learned his 1999 public school still "needs or good as when it was new"

**"We're switching to flat screens"**  
Another commercial client instead of working monitors, replaced by flat screens, should be recycled/donated here in the USA.

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Consumers find it difficult to judge their own supply. One insists "works as well as it did in 1988"; another insists their working monitors not be donated or resold.

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**4 Simple Due Diligence Tests**

- Glass recycling records
- Gold bearing scrap records
- Sample manifests (declared reuse items)
- Employees or capital investment per ton

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If some or any exports are allowed, how can you compare vendors? We suggest 4 simple tests.

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1. **CRT Glass Test** - Legitimate USA recyclers must be able to show where the LEAD (non-repairable glass) goes.



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#1 CRT Glass Test: How much and where does it go? CRT glass is the most expensive thing to process, the most toxic, the highest volume, and the least likely to be recycled overseas.

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2. **Printed Circuit Board (PCB) Gold Test (DRAFT)**  
Nasty recycling (and nastier mining) practices. We do all Printed Circuit Boards domestically.

Q: Will this lead to more mining?  
A: Gold mining is maxed out already



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#2 Gold Recycling Test: Asian demand for gold leads importers to accept junk just to get the gold scrap. We do circuit boards domestically.

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3. **Truth in Exporting Test** - Legitimate bill of lading shows make/model/voltage/COO/condition.



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#3 Truthful bill of lading... USA companies should declare what they are shipping, not ship as "scrap metal". You don't have to see proprietary names, but ask to see the shipping labels.

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4. Employment / Capacity Test

- How many tons did the company handle last year?
- How many employees per ton?
- If fewer employees, how much automated processing equipment is in place?



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#4) Investment per ton test. There's no free lunch – if there are no employees or no processing equipment, the stuff has to go elsewhere. Find out where.

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- mineralpolicy.org
- mpi.org.au
- USGS.gov
- moles.org
- ban.org
- copper.org
- www.antigraymarket.org
- these and other links www.retroworks.com



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Suggested links \_\_\_\_\_

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