



United States Environmental Protection Agency (US EPA) Participant Report

A Brief Introduction

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Generation and Recycling of Used Electronics in the U.S.

- E-Waste makes up 1-2% of total waste stream in U.S.
- 2011 Study Commissioned by EPA
 - Used data from 1980-2010
 - Estimated number of products reaching end-of-life (EOL) annually and how many were recycled, landfilled or stored
 - PCs (desktop and laptop), monitors, keyboards, mice, hard-copy devices, TVs, mobile devices



Generation and Recycling of Used Electronics in the U.S.

- In 2009:
 - **438 million new** electronic products sold
 - **5 million short tons** electronic products in storage
 - **2.37 million short tons** ready for EOL management
 - **25% of 2.37 million short tons** sent for recycling
 - **1999 to 2009:** 122% increase in EOL electronics
 - **2006 to 2009:** increase in recycling of 179 thousand short tons
- Accurate, reliable data are limited

Sales of Electronic Products by Model Year, in Number of Units Sold (yr. 2010 is projected)

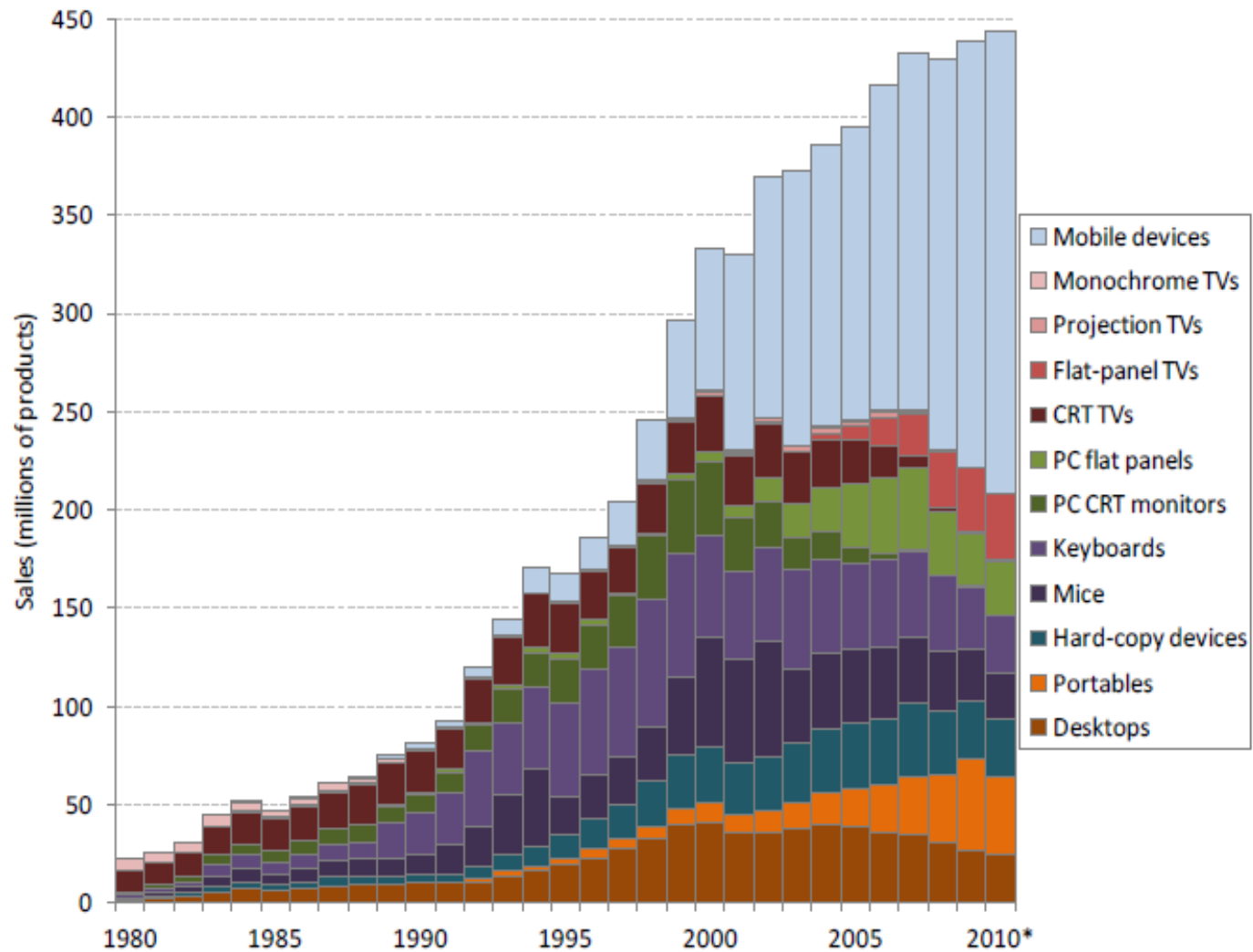
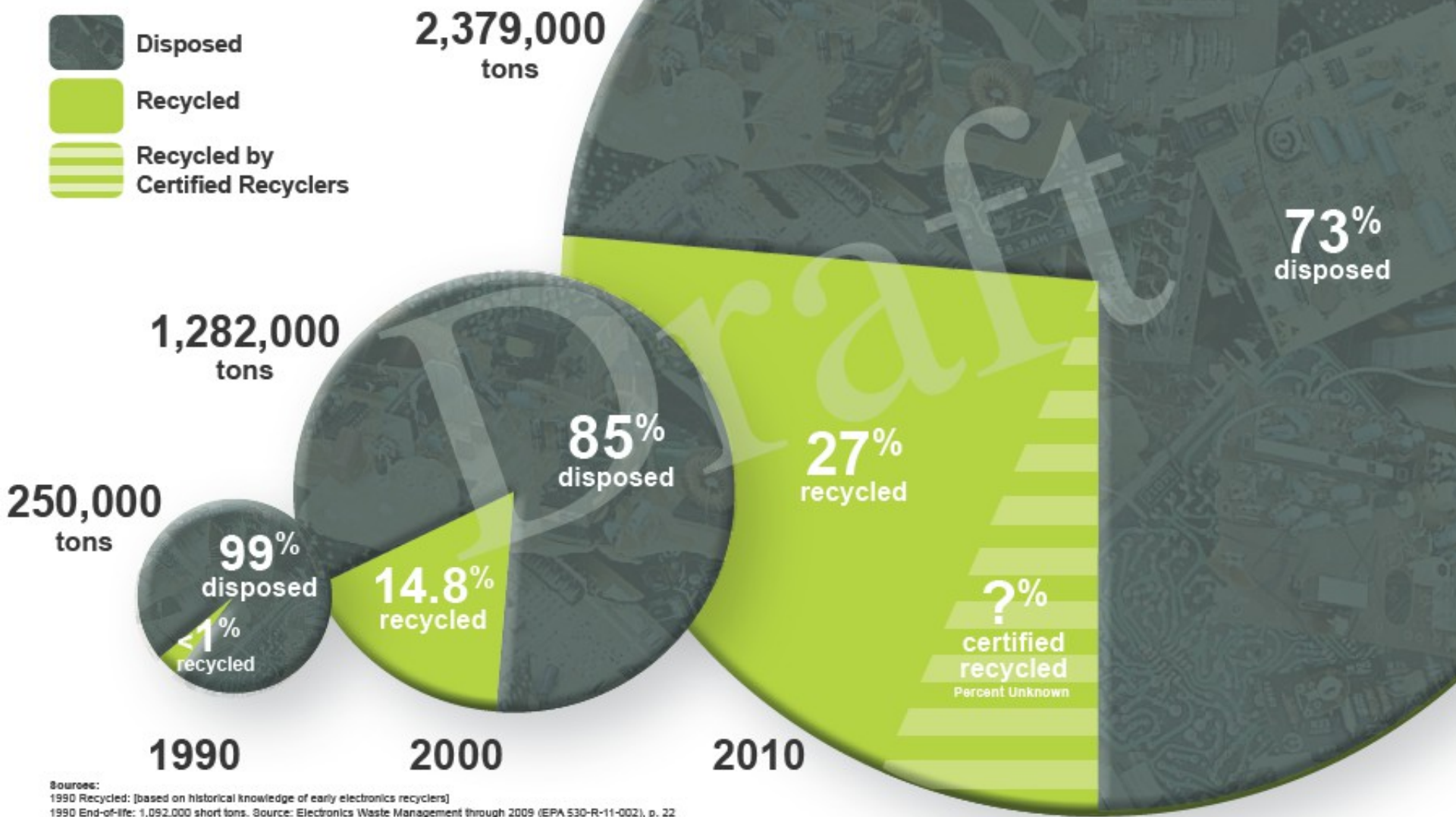


Figure 2: Sales of electronic products by model year, in number of units sold. *Results for 2010 are projected based on estimates from previous years.

End-of-life Electronics in the U.S.



Sources:
 1990 Recycled: [based on historical knowledge of early electronics recyclers]
 1990 End-of-life: 1,092,000 short tons. Source: Electronics Waste Management through 2009 (EPA 530-R-11-002), p. 22
 2000 Recycled: 14.8 percent (190,000 tons). Source: Electronics Waste Management FINAL July 2008 (EPA530-R-08-009), p. 23
 2000 End-of-life: 1,092,000 short tons. Source: Electronics Waste Management FINAL July 2008 (EPA530-R-08-009), p. 23
 2010 Recycled: 27 percent through 2009 (2010 projected). Source: Electronics Waste Management in the United States (EPA 530-R-11-002), p. 22
 2010 End-of-life: 2.37 million short tons through 2009 (May 2011). Source: Electronics Waste Management in the United States (EPA 530-R-11-002), p. 5

Quantity of Electronic Products Ready for End-of-Life Management in the United States

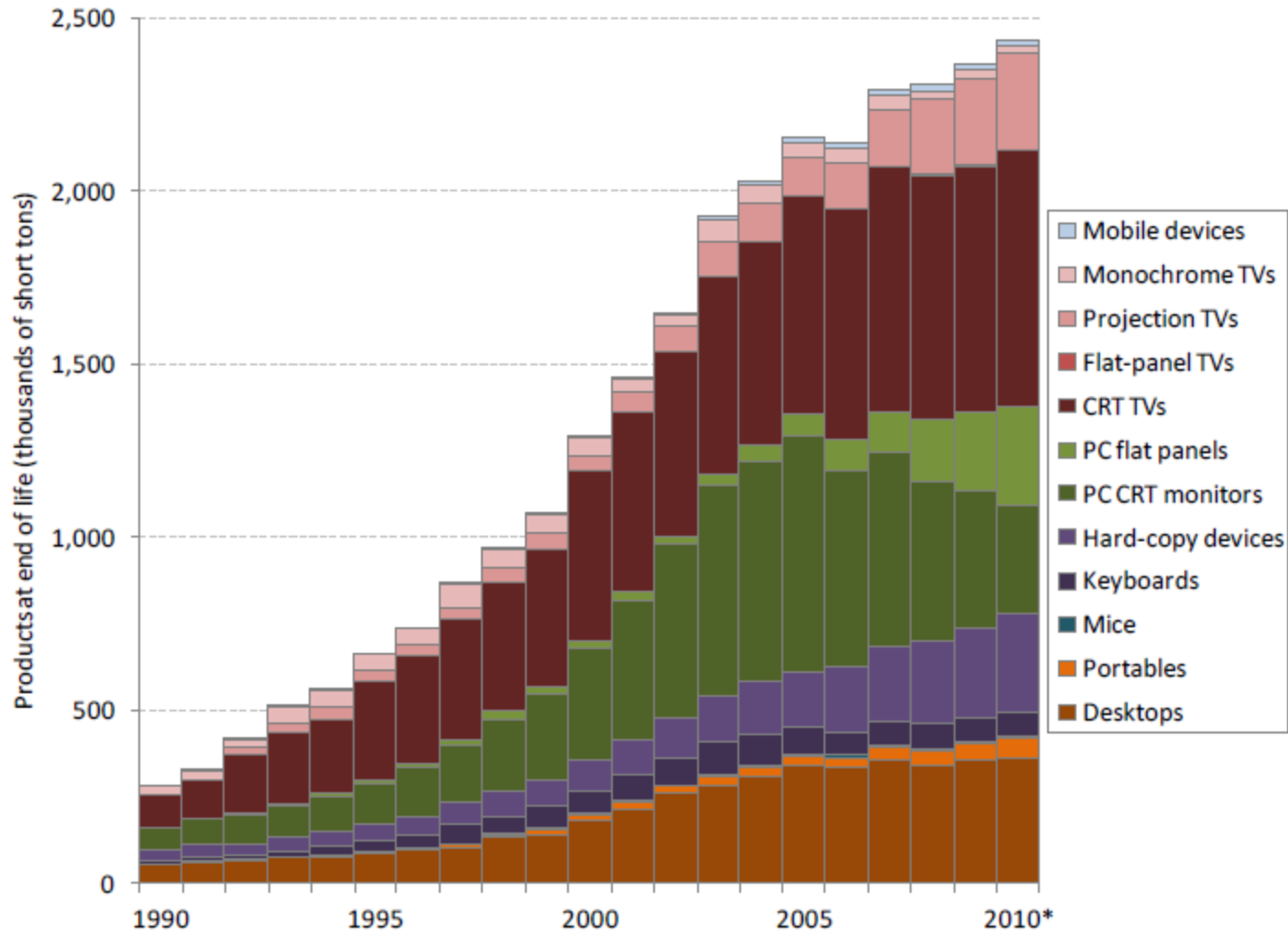


Figure 4: Quantity of electronic products ready for end-of-life management in the United States. *Results for 2010 are projected based on estimates from previous years.



National Strategy for Electronics Stewardship (NSES)

- Strategy Launched July 20, 2011 with issuance of Report
 - www.epa.gov/waste/consERVE/materials/ecycling/taskforce/index.htm

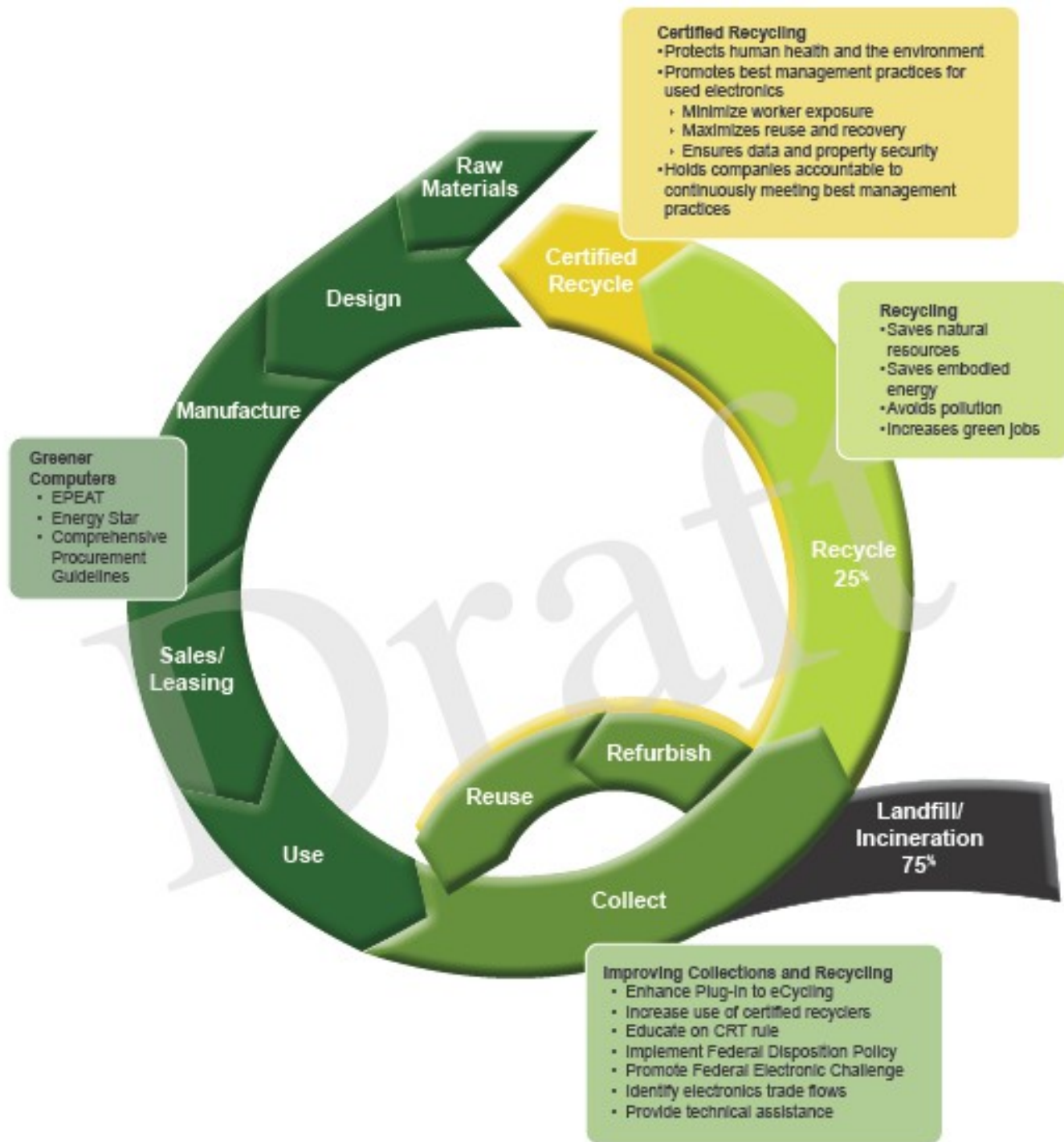
- Report and Recommendations Developed by Interagency Task Force:
 - Council on Environmental Quality (CEQ)
 - U.S. Environmental Protection Agency (EPA)
 - U.S. General Services Administration (GSA)



EPA's Role in Electronics Management

EPA is advocating the four goals of the National Strategy:

1. **Build incentives for *greener electronics design and innovation.***
2. **Ensure that the *Federal Government leads by example.***
3. **Increase *Safe and Effective Management and Handling of Used Electronics in the United States.***
4. **Reduce *Harm from US Exports of E-Waste* and Improve *Safe Handling of Used Electronics in Developing Countries.***





Goal 2: Ensure that the Federal Government leads by example.

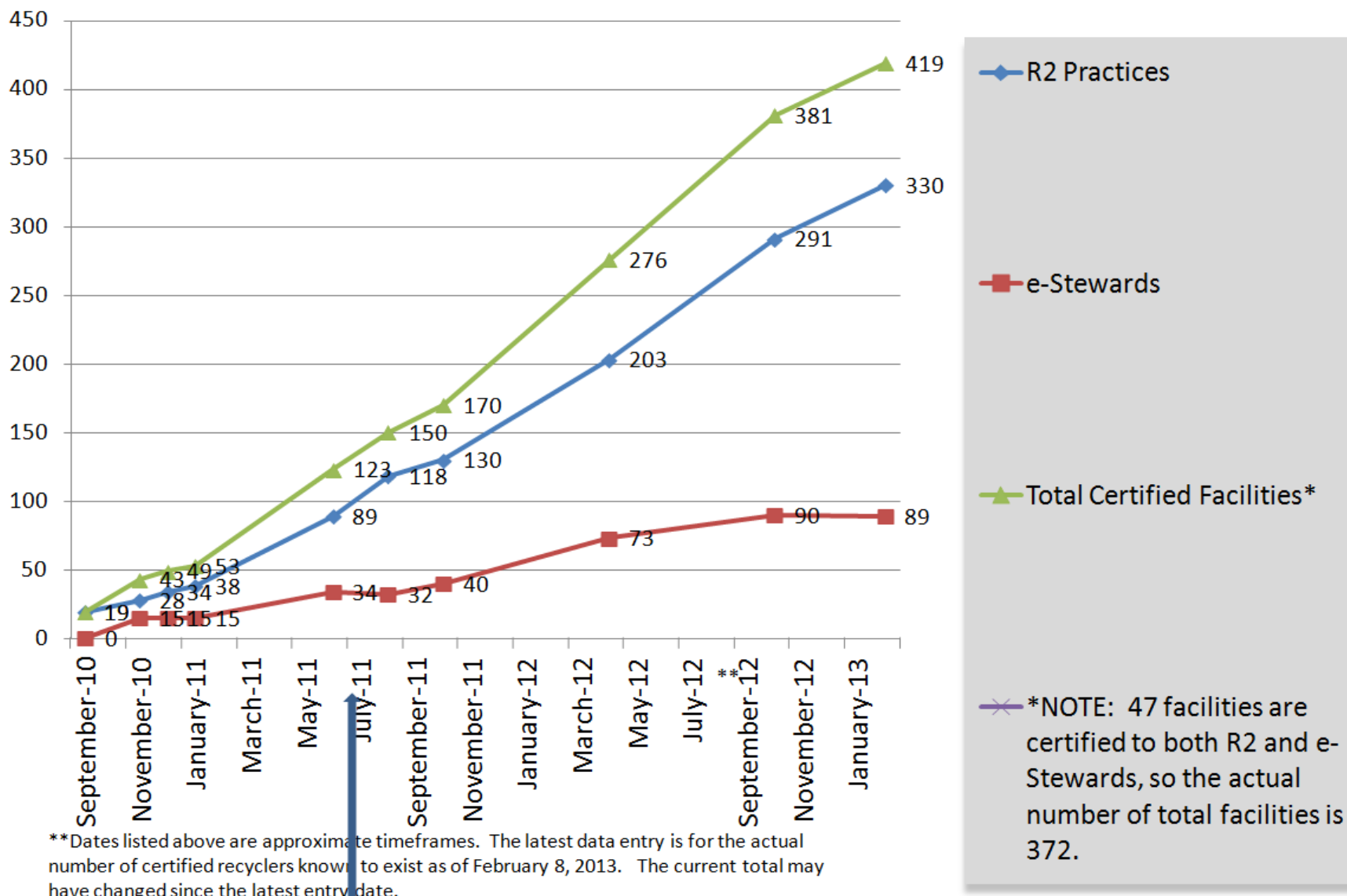
- **Federal Electronics Challenge (FEC):**
 - **1) Acquisition and Procurement (EPEAT)**
 - **2) Operations and Maintenance**
 - Power Management, ENERGYSTAR
 - **3) End-of-life Management**
 - Use certified electronics recyclers
 - E-Stewards certified
 - R2 certified



Goal 2: Ensure that the Federal Government leads by example (continued)

- Have the Federal government **lead by example**:
 - Establish a comprehensive and transparent government-wide policy on used Federal electronics that:
 - that maximizes reuse,
 - clears data and information stored on used equipment, and
 - ensures that all Federal electronics are processed by certified recyclers.
 - **NOTE: Federal regulation to require all federal agencies to use certified electronics recyclers is under development.**
 - The U.S. federal government's example will help to **increase the use of certified recyclers in the US**

Certified Electronics Refurbishers and Recyclers



**Dates listed above are approximate timeframes. The latest data entry is for the actual number of certified recyclers known to exist as of February 8, 2013. The current total may have changed since the latest entry date.

NSES Released July 2011



Countries with Certified Recyclers

(includes both R2 and eStewards Certified Recyclers)

- Australia
- Germany
- India
- Malaysia
- Mexico (7)
- New Zealand
- Costa Rica (1)
- South Korea
- United Kingdom
- United States

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Certified Electronics Refurbisher and Recycler Map-2.8.13

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Certified Electronics Refurbisher and Recycler Map-2.8.13

This map shows electronics recyclers certified to current electronics recycling standards (e-Stewards® and R2 Practices). To use this map, please click on the "Show Contents of Map" icon above, next to the "About This Map" icon.

Web Map by powell.shayla_EPA
Last Modified: February 8, 2013

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Goal 2: Ensure that the Federal Government leads by example.*(continued)*

Within the Federal Government, to lead by example:

- **Minimum environmental criteria are under development**
- Policy revision will require Agencies to **hire only certified electronics recyclers.**
- EPA and GSA are conducting implementation study of certification programs:
 - E-Stewards
 - R2 Practices



Goal 3: Increase Safe and Effective Management and Handling of Used Electronics in the United States.

➤ National Electronics Challenge

- Launched voluntary partnerships with the electronics industry in 2012:
 - Current participants: Best Buy, Dell, LG, Nokia, Panasonic, Samsung, Sharp, Sony, Sprint-Nextel, Staples
- Objective is to achieve ***100% certified electronics recycling***



Goal 3: Increase Safe and Effective Management and Handling of Used Electronics in the United States. (continued)

The National Electronics Challenge aims to achieve Goal 3 through:

- **Commitment to certified recyclers** for used electronics/e-waste
 - R2
 - E-stewards
- **Continual Improvement:**
 - EPA would like to see 100% of the electronics that are taken back by Original Equipment Manufacturers (OEMs) and Retailers to be recycled by certified electronics recyclers.



Goal 4: Reduce Harm from US Exports of E-Waste and Improve Safe Handling of Used Electronics in Developing Countries.

Capacity Building and Sharing Best Practices

- Asia:
 - Global E-Waste Management (GEM) Network Annual Workshops on WEEE Management and Policy Development
 - Case Study on WEEE recycling in Taiwan (China), more to come
 - 2012: Stakeholder Meetings in Beijing and Shenzhen
 - 2013: Feasibility study on Pollution Control for Printed Circuit Board Recycling (Complement to \$10 Million UNDP-MEP GEF Proposal)
- Africa: Electronics demanufacturing facility in Ethiopia (Ongoing)
- Latin America-Caribbean: International Dialogue on Environmentally Sound Management of E-Waste (May 2012)



Goal 4: Reduce Harm from US Exports of E-Waste and Improve Safe Handling of Used Electronics in Developing Countries. (continued)

Research efforts to improve information on trade flows and handling of used electronics:

- **U.S. International Trade Commission (ITC) Survey:**
- Study on US exports of used electronics; report released Mar. 2013
 - <http://www.usitc.gov/publications/332/pub4379.pdf>
- **UNU/MIT/NCER Study:**
- To characterize transboundary flows of used electronics from the US; Results out March-April 2013
- **U.S./Canada/Mexico research project:**
- Estimating exports of materials between these countries and with selected other countries



Goal 4: Reduce Harm from US Exports of E-Waste and Improve Safe Handling of Used Electronics in Developing Countries. (continued)

Ways to achieve Goal 4 include:

➤ Cathode Ray Tube (CRT) Rule Enforcement:

- Regulatory changes proposed to improve compliance with the existing regulation that governs the export of CRTs for reuse and recycling.

➤ Two types of notifications:

1. Export for recycling

- **International notification & consent**
- **Notify EPA Headquarters**

1. Export for reuse/refurbishment

- **One-time notification to EPA only**
- **Notify EPA Region**

- <http://www.epa.gov/epawaste/hazard/recycling/electron/index.htm>



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