The R2/RIOS® Program

Certified Electronics Recycler®

State Electronics Challenge

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Over 1,550 member companies-7,000+ facilities worldwide - that process, broker & consume scrap metals, paper, plastics, glass, textiles, rubber, and electronics.
In 2008, the U.S. Environmental Protection Agency, U.S. states, Electronics Manufacturers (e.g. Dell, HP) recyclers, trade groups, and Environmental NGOs produced the R2 Practices.

A market-based mechanism: provides essential information/assurances to prospective customers

The R2 document and checklist are available at www.R2solutions.org
Recyclers shall develop, document, fully implement, review at least annually and update a comprehensive, documented, environmental, health, and safety (EHS) management system.
EHSMS options

(1) Recycling Industry Operating Standard® (RIOS)
Comprehensive environmental, health & safety, and quality management system that integrates the best aspects of ISO 14001, ISO 9001, and OHSAS 18001

(2) ISO 14001 (environmental) and OSHAS 18001 (health and safety)

(3) Certification from an Accredited Certification Body that their EHSMS conforms to the R2 Practices
Recycler shall comply with all applicable environmental, health, and safety legal requirements and shall only export equipment and components containing FM's to countries that legally accept them.
OSHA and EPA helped develop R2’s on-site EHS requirements

Electronics recyclers:

- must identify and assess on ongoing basis occupational hazards and risks that may arise

- must address these hazards and risks in accordance with hierarchy of strategies developed by OSHA

- must protect all workers equally (e.g. prisoners)
Most common systems are designed to process either 4-6 tons per hour or 10-12 tons per hour.

Produce consistent and well liberated materials at the highest possible processing capacity.
R2 prohibits exports to Non-OECD countries unless...

demonstrate legality of the import, and

the facility can demonstrate and verify environmental and health and safety, and security standards are in place
the following are R2 Focus Materials:

(1) items containing polychlorinated biphenyls (PCBs),
(2) items containing mercury,
(3) CRTs and CRT glass,
(4) batteries
(5) whole and shredded circuit boards*

* except for whole and shredded circuit boards that do not contain lead solder, and have undergone safe and effective mechanical processing, or manual dismantling, to remove mercury and batteries
Recyclers shall only do business with downstream vendors that conform to key R2 requirements.

- Comprehensive EHSMS
- Legal requirements
- Copies of environmental permits
- Downstream Vendor Conformity
- Reuse provisions
- Exporting provisions
- Tracking throughput
Prior to shipping equipment containing FMs for reuse, repair, refurbishment, or remanufacturing, do one of the following:

-test to ensure key functions are working properly
tested for key functions
Prior to shipping equipment containing FMs for reuse, repair, refurbishment, or remanufacturing, do one of following:

Or

-determine recipient is R2 certified vendor and

establish through contract, auditing and records that:

-equipment meets the specifications of recipient, and

the recipient is selling with key functions working, and

the recipient manages residual FMs in conformity to R2
assure facility is R2 certified vendor
R2 recyclers shall

-sanitize, purge, or destroy data on hard drives and other data storage devices

there is other stuff too
R2 Solutions

- Independent, non-profit established to manage and oversee R2 and its implementation
- Highly regarded Board of Directors representing broad stakeholder interests
- Open and transparent governance structure
- Provides a long-term sustainable quality control mechanism

www.R2Solutions.org
R2 Technical Advisory Committee

- Responsible for the content of the R2 Standard

- Keeping it up to date as technologies, management practices, and the materials processed change within the electronics recycling industry.

- A process that is balanced, transparent, and open to input from all interested parties, including the general public.

- The TAC will begin the process of updating the standard this summer.
R2 Technical Advisory Committee

- Mike Watson, Dell (OEM)
- Chris Cleet, ITIC (Representing OEMs)
- Bill Long, Wistron (ODM)
- Chris Boik, Best Buy (Large Customer)
- Robert Gamer, UPS (Large customer)
- Bob Holcombe, General Services Administration (Large customer)
- Renee St. Denis, Sims (Recycler)
- Joe Clayton, Synergy Recycling (Recycler)
- Eric Harris, ISRI (Representing recyclers)
- Rike Sandlin, Intechra (ITAD/Refurbisher)
- Neil Simmons, Tech Turn (ITAD/Refurbisher)
- Colin Davis, WR3A (Representing refurbishers)
- Josh Lepawsky, Memorial University - Dept. of Geography (Environmental/Trade Expert)
R2 Quality Control

- Training materials
- Guidance document
- Focus on assuring downstream due diligence
- Regular training classes
-65 facilities are certified to R2 and R2/RIOS® (23)

-100+ facilities working towards certification

-4 Accredited Certification Bodies
www.CertifiedElectronicsRecycler.com
thank you

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