Electronic device scrap (e-Scrap) is the waste generated by daily use and production of electronic components. Refurbishing, de-manufacturing, recycling, and reusing electronics and the potentially toxic contaminants, brings with it possible health and environmental risks. Whether it be an original equipment manufacturers (OEMs), consumer, municipality or another type of organization, responsible e-Scrap handling and recycling is a necessary step in protecting workers, consumers and the environment.

E-scrap recycling programs require items to be gradually de-manufactured or refurbished until the materials have been converted back into a raw material commodity, product or finally disposed.

E-Scrap Standards

Countries around the world are mandating specific recycling practices to protect workers and communities, and are demanding strict internal monitoring of the processes within organizations. Certification to an electronic recycling standard is the most practical method companies use to demonstrate that they are adhering to product stewardship best practices, and meeting government and regulatory agencies requirements.

**e-Stewards®**: an EHS standard for e-waste recyclers, refurbishers and refiners that incorporates all the requirements of ISO 14001, enhanced to address health and safety, data security, reuse and refurbishment, recycling chain accountability, export restrictions and more.

**Responsible Recycling R2®**: an EHS standard for e-waste recyclers, that addresses environmental protection, health and safety, data security, reuse and refurbishment, recycling chain accountability, export restrictions and more.

**Recycling Industry Operating Standard® (RIOS)**: a QEHS standard comprising most of the requirements of ISO 9001, ISO 14001 and OHSAS 18001, written specifically for the scrap recycling industry.

The standards have been designed to serve recyclers, which include but is not limited to electronics resellers, refurbishers, recyclers, demanufacturers, brokers, as well as leasing companies that engage in these activities.
Electronic Recycling (e-Scrap) Standards

The various e-Scrap certification programs share common elements which aim to foster management system best practices and assess environmental, occupational health and safety, and data security considerations. Since all programs are to some degree based on the requirements of existing environmental, occupational health and safety and, quality standards, the e-Scrap standards go beyond simply addressing electronic recycling requirements, and seek to ensure that management system best practices are ingrained in how companies do business, and ensure responsible recycling of electronic scrap.

**e-Stewards®**

The e-Stewards® Standard for Responsible Recycling and Reuse of Electronic Equipment was established by the Basel Action Network (BAN) in partnership with leaders in the recycling industry. Its purpose is to provide appropriately rigorous, yet practical operational criteria for globally responsible recycling and refurbishing of electronic equipment. Intended for use by recyclers, refurbishers, metal refiners, collectors and brokers, the standard builds on ISO 14001 as a platform, and companies certified to e-Stewards may also be issued an ISO 14001 certificate. In addition, the e-Stewards standard also incorporates:

- An expanded scope to include Occupational Health and Safety
- Socially responsible practices
- Data security and media sanitization
- Toxic material handling practices
- Export and disposal restrictions
- Recycling chain of custody accountability

Learn more about the e-Stewards standard at [www.e-stewards.org](http://www.e-stewards.org).

**R2 – Responsible Recycling®**

The R2 Governing Council manages the content of The Responsible Recycling© (R2) standard. Developed by a cooperative of e-Scrap stakeholders that included the U.S. Environmental Protection Agency (EPA), state governments, manufacturers, recyclers, trade groups and non-governmental organizations. The goal of the standard is to create a voluntary, market-based mechanism for ensuring best practices for recyclers and organizations that engage in recycling, refurbishing, reselling, demanufacturing and brokering of electronic scrap. The standard builds on an ISO style Plan-Do-Check-Act management system as a platform, and requires certification to ISO 14001 and OHSAS 18001, or RIOS. The R2 standard also incorporates:

- Data security and media sanitization
- Toxic material handling practices
- Export and disposal restrictions
- Recycling chain of custody accountability

Learn more about the R2 standard at [www.r2solutions.org](http://www.r2solutions.org).

**RIOS® – Recycling Industry Operating Standard**

The Recycling Industry Operating Standard (RIOS®) was established by The Institute of Scrap Recycling Industries, Inc (ISRI) and about 50 RIOS Charter Members. The standard incorporates virtually all the requirements of ISO 9001 and ISO 14001, and most of OHSAS 18001’s requirements, bringing them together into one streamlined management system. The standard, written specifically for the scrap recycling industry, requires membership to the RIOS Program through ISRI.

Organizations that implement continual improvement management systems, such as RIOS, designed to manage everyday operations that impact on customer satisfaction, environmental and health and safety performance could:

- Improve EHS performance and reduce EHS expenses,
- Reduce operating costs,
- Improve quality and productivity,
- Improve external relations with customers, community and regulatory bodies, and thus provide a competitive advantage through improvement performance and credibility

Learn more about the Recycling Industry Operating Standard at [www.certifiedelectronicrecycler.com](http://www.certifiedelectronicrecycler.com).

**RIOS/R2®**

R2/RIOS™ is a combination of the Responsible Recycling (R2) Practices and the Recycling Industry Operating Standard™ (RIOS™). R2/RIOS™ implementation and certification requires an audited management system addressing environmental, occupation health and safety, and quality be in place. Companies who are not certified to ISO 9001, ISO 14001 and OHSAS 18001, and would like to implement a management system, may wish to instead pursue an R2/RIOS™ certification.
The ISO 9001 Standard

ISO 9001 can be applied to any type or size of organization from a small family business to the world’s largest corporation or government institution. It provides a structured yet flexible framework for a customer-focused Quality Management System that can drive performance improvement. ISO 9001 implementation can provide organizations with measurable improvements in their overall business performance, effectiveness, and efficiency.

The ISO 14001 Standard

ISO 14001 is an International standard that provides a framework that any organization can follow to set up an effective Environmental Management System (EMS). Implementing this Standard, can provide assurance to management and employees, as well as external stakeholders, that environmental impacts are being measured and improvement projects will be implemented.

The OHSAS 18001 Standard

OHSAS 18001 is an International Occupational Health and Safety management system (OHSMS) standard that is designed to help organizations manage their occupational health and safety risks. This structured management systems approach enables organizations to identify hazards, assess and prioritize risks and implement appropriate protective and preventive control measures to reduce the potential for occupational injuries, illnesses and fatalities.

Training and Business Improvement Services

As a leading provider of environmental management standards certification and auditing, SAI Global provides environmental training, GAP Analysis, Technical Advisory Services, 1st and 2nd party audits and on-site training that can help your organization improve business processes, increase efficiencies and reduce risk.

Each year over 12,000 people partner with SAI Global for their training and business improvement needs. SAI Global is committed to providing you the most current and up-to-date training courses through a wide-range of innovative learning approaches and tool-based solutions to help you better understand, enhance your business management systems and maximize your business investment to achieve your objectives. We offer flexible options for individuals and organizations to build awareness, knowledge and skills at an individual level, and across the entire organization. Whether it’s a public training course, a private training engagement at your location, or our e-learning courses – we have a variety of learning options to meet your needs.

Visit www.saiglobal.com/courses for our full course offerings.
Show your commitment to the Environment with e-Scrap certification from SAI Global.

SAI Global is a worldwide leader in Environmental Management System certification and training. We understand that obtaining a certificate is just the beginning of your management systems journey. It’s a milepost in your continuing pursuit of business excellence. When you partner with SAI Global for your certification needs, you know you’re working with an accredited industry leader.

Exceptional Auditors

Our auditors understand that the application of the standard can be quite different in small, medium and large organizations, and are trained to assess your system in a way that will be appropriate to your business. Our customers choose us because they know we’re a partner they can depend on, and they continue to stay with us each year because they value the insight that their auditor gives to their business. Certification is more than a certificate; it’s an opportunity to make your business better, and SAI Global partners with customers to ensure they receive the most from their audits.

Comprehensive Training

We offer a breadth of learning options that meet genuine market needs, delivered via a wide range of options to suit our clients’ requirements including Public Training, In-house and On-line courses. And while our courses and methods are continually updated to ensure that they are relevant and engaging, what remains constant is the value and solid outcomes that they deliver to our clients. Some of our training courses include:

- **e-Stewards Version 1.0 Auditor Certification Course**: training for ISO 14001 Lead Auditors to become qualified to conduct e-Stewards certification audits
- **e-Stewards Internal Auditor Course**: training is focused on the requirements of the e-Stewards standard and on the internal audit process
- **e-Stewards® Management System Implementation Course**

Visit www.saiglobal.com/courses for course dates and other offerings.

Ongoing Support

SAI Global’s commitment to serving your organization continues long after you receive your certificate. Our pledge to support your continual improvement includes:

- Ongoing learning opportunities, such as free webinars that focus on continual improvement
- Certification clients receive 10% off our public and on-line training courses
- A global audit team that is ready to grow with your business

As an international certification leader, SAI Global has the ability to audit to a wide range of management system standards from e-scrap and ISO 14001 to food safety, the environment, aerospace, automotive, medical devices, health and safety, as well as many other industries.

E-Scrap Free Resources

Trust the experts for industry insights and management systems expertise. SAI Global offers free resources on how to implement e-Scrap management systems and improve organizational processes.

- **White paper**: E-Scrap – E-Scrap Recycling Standards Overview & Implementation Roadmap
- **e-Stewards Implementation Checklist**
- **R2 Implementation Checklist**
- **RIOS Implementation Checklist**

Find more free resources at: www.saiglobal.com/assurance/resource-library/environment.

Help From Start to Finish

SAI Global is a full service partner, and can provide all the help you need from start to finish, including:

- Utilize our free materials including white papers and checklists
- Take ISO 14001 training
- Measure progress with a gap assessment
- Schedule the certification audit

Contact an SAI Global representative today and learn how we can help you improve your business.