

Framework for the ESM of hazardous wastes and other wastes from industry's perspective and the implications in Asia

Workshop 2012 of the Asian Network for Prevention of
Illegal Transboundary Movement of Hazardous Wastes
(Asian Network Meeting)
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ISRI Membership

Over 1,750 private sector companies worldwide who operate approximately 7,000 facilities around the globe, 5000 of which are located in the U.S. ISRI members process, broker & industrially consume scrap metals, paper, plastics, glass, textiles, electronics and rubber.



2011 Total U.S. Recycling Industry

- Recycled approximately *135 million tons* of recyclables into commodity grade materials worth *\$100 billion*
 - *51.7 million tons, \$39.2 billion* traded with 161 countries worldwide



U.S. Global Scrap Commodity Markets (2011)

1. China	21. UAE	41. Saudi Arabia	61. Senegal	81. Jamaica
2. Canada	22. Spain	42. Honduras	62. Czech Republic	82. Togo
3. Turkey	23. Sweden	43. Argentina	63. Panama	83. Haiti
4. Korea	24. Finland	44. France	64. Tanzania	84. Sierra Leone
5. Taiwan	25. Peru	45. Kiribati	65. Ireland	85. Gabon
6. United Kingdom	26. South Africa	46. Trinidad & Tobago	66. Georgia	86. Bahamas
7. Germany	27. Greece	47. Dominican Rep	67. New Zealand	87. Mozambique
8. India	28. Ecuador	48. Singapore	68. Bolivia	88. Uganda
9. Mexico	29. Norway	49. Israel	69. Belize	89. Algeria
10. Italy	30. Austria	50. Costa Rica	70. Liberia	90. Cambodia
11. Japan	31. Brazil	51. Ghana	71. Congo (ROC)	91. Iceland
12. Hong Kong	32. El Salvador	52. Nigeria	72. Portugal	92. Suriname
13. Malaysia	33. Bangladesh	53. Angola	73. Uruguay	93. Denmark
14. Thailand	34. Colombia	54. Tunisia	74. Laos	94. Aruba
15. Belgium	35. Philippines	55. Kazakhstan	75. Lebanon	95. Jordan
16. Egypt	36. Guatemala	56. New Caledonia	76. Russia	96. Congo (DROC)
17. Vietnam	37. Chile	57. Nicaragua	77. Hungary	97. Benin
18. Netherlands	38. Venezuela	58. Mauritania	78. Kenya	98. Afghanistan
19. Indonesia	39. Morocco	59. Armenia	79. Slovak Republic	99. Djibouti
20. Pakistan	40. Australia	60. Sri Lanka	80. Qatar	100. Gambia

Industrial Commodities Produced from Scrap in the U.S. (2011)

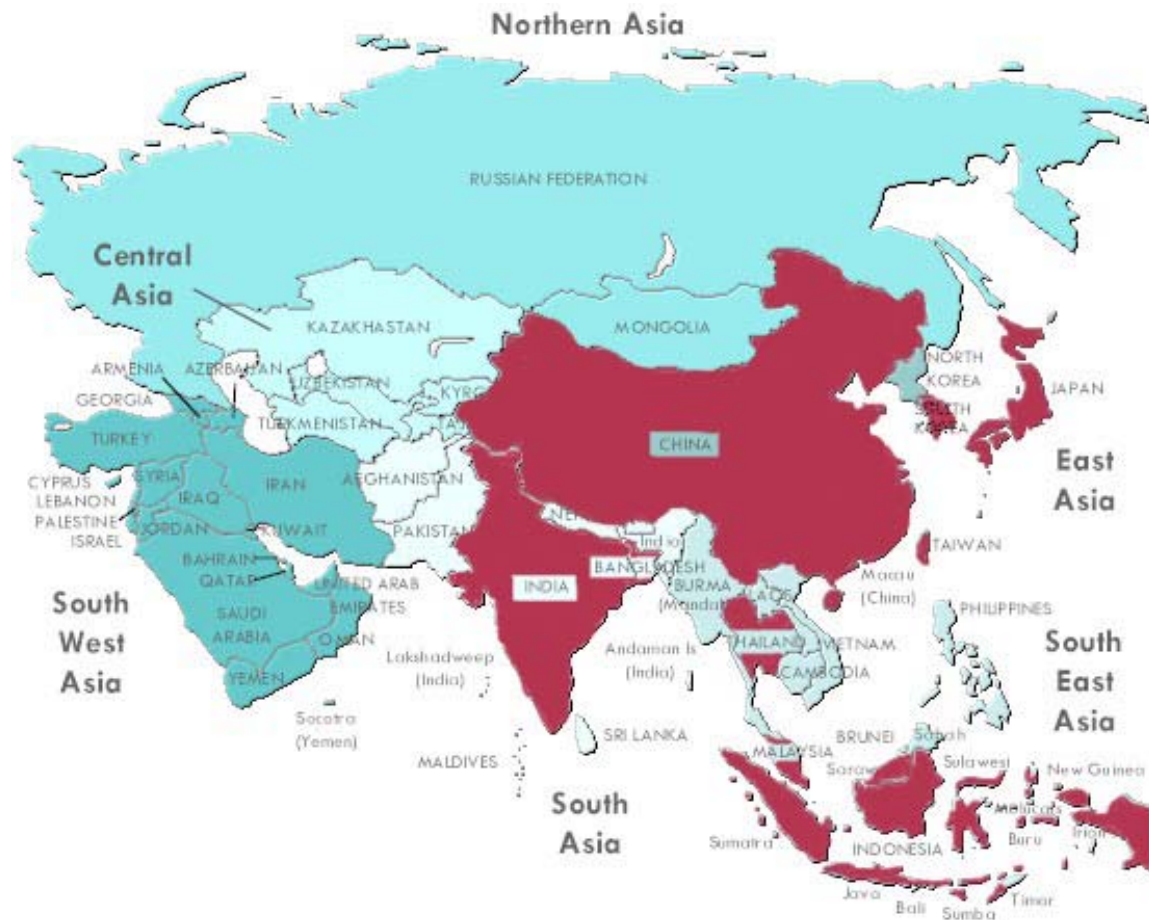
- 73 million tons of iron and steel
 - 48 million tons of paper
 - 5.1 million tons of aluminum
 - 2.0 million tons of copper
 - 1.2 million tons of lead
 - 230,000 tons of zinc
 - Total 134 million tons*
- *3.5 million tons derived from electronics



Asia & Southeast Asia

All Scrap by Value 2011

1. China	\$ 11.5B	
2. South Korea	\$ 2.1B	
3. Taiwan.	\$ 1.9B	
4. India	\$ 1.0B	
5. Japan		\$ 654M
6. Hong Kong	\$ 548M	
7. Malaysia	\$ 455M	
8. Thailand	\$ 416M	
9. Vietnam.	\$ 222M	
10. Indonesia	\$ 171M	
Others		\$ 209M
Total		\$ 19.2B

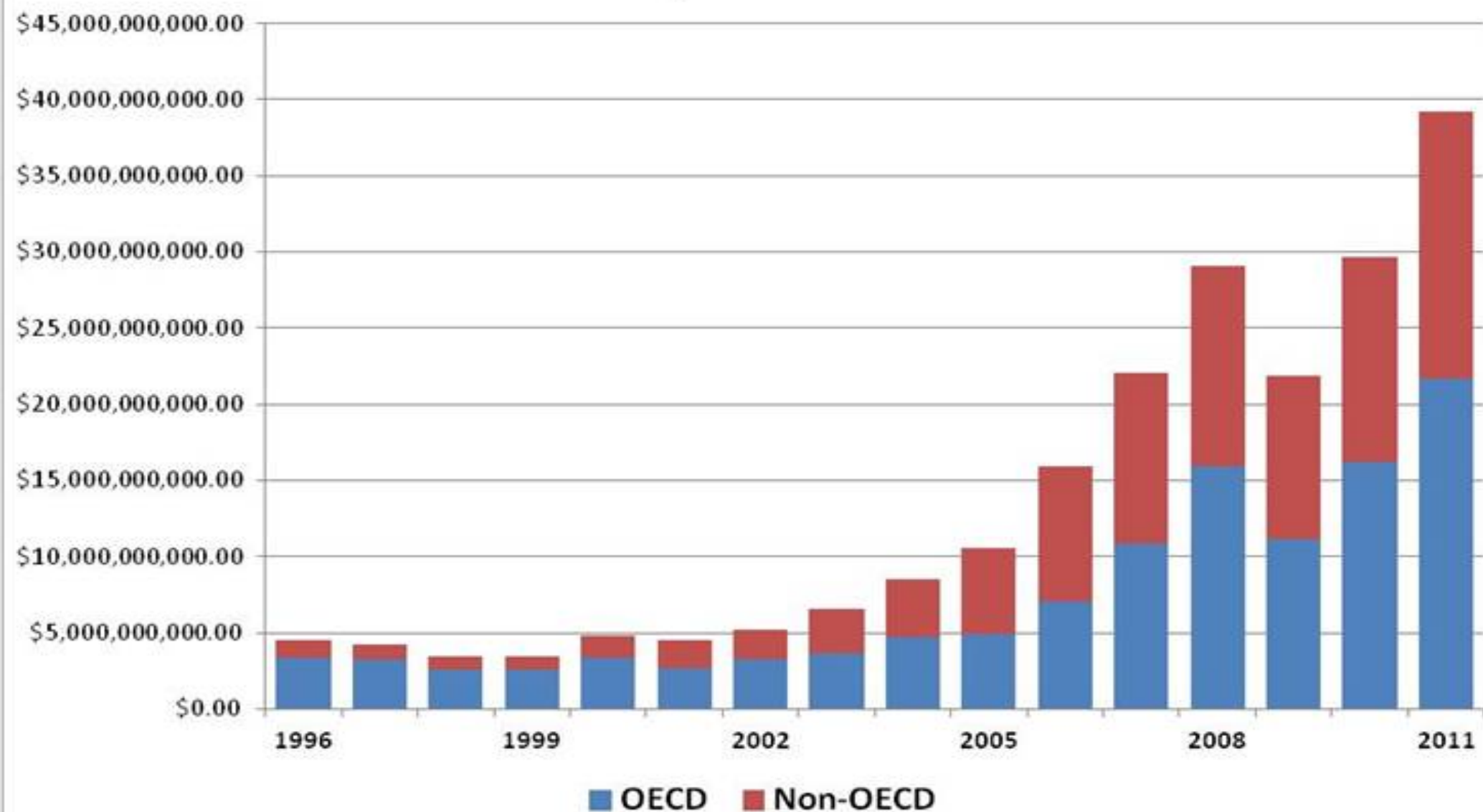


- Non-Ferrous Metal 41%
- Ferrous, Stainless & Alloy 38%
- Scrap Paper 16%

- Plastic 5%
- Rubber .2%
- Glass & Textile .1%

FAS Value of All U.S. Scrap Exports to OECD and Non-OECD Countries, 1996-2011 (\$)

Source: U.S. Census Bureau/U.S. International Trade Commission



ISRI and Environmentally Sound Management

ISRI has long maintained that recycling activities must be carried out in an environmentally sound manner, wherever such activities are carried out--regardless of whether those activities take place within the OECD or not.

ISRI respects the rights of each sovereign state to establish laws and regulations regarding environmental protection.

ISRI also respects the rights of each sovereign nation to develop its economy, especially with regard to industrial activity and abhors efforts by some to stymie the growth of such nations by denying those nations access to necessary raw materials.

ISRI's Commitment

In 2010, ISRI created an export policy that is –

- Socially-responsible,
- Protects worker health and safety, and
- Ensures environmentally sustainable practices globally

ISRI condemns sham recycling and illegal exports; emphasizes critical need for compliance with both domestic & international law

ISRI's commitment: recycling must be done right anywhere and everywhere in the world

ISRI's Electronics Export Policy

- **Free and Fair Trade of Specification Grade Commodities**
- **Bans Exports for Landfilling**
- **Tested, Working for Direct Reuse**
- **Data Sanitized, Purged or Destroyed**
- **Packaged and Transported to Protect Human Health and the Environment**
- **Downstream Due Diligence for Any Facility Located Outside of the United States**
 - **Must be legal to export and import**

An industry seeks to fulfill its commitment

- **To the global environment**
- **To protect the health and safety of its workers and the communities surrounding its facilities**
- **To produce high quality, specification grade raw materials that can often be used as direct substitutes for virgin materials in the manufacture of new basic materials**

A new standard is born

- The Recycling Industry Operating Standard™ (RIOS™) is a fully integrated management system standard that addresses environmental management, health & safety and quality
- RIOS was developed strictly for the recycling industry--no other management system standard addresses recycling issues specifically

Why not use the ISO Certifications?

- Each certification (9001-quality, 14001-environment) is stand alone
- Requires a different standard for health & safety (OHSAS 18000)
- Each certification requires a separate audit
- Each certification requires its own documentation / training, often resulting in duplication of effort
- Allows facilities to choose what they are registered to, i.e., only a portion of what they do at the facility

Why RIOS?



- RIOS was developed as a consensus standard specifically for the recycling industry
- Inherent understanding of the issues recycling facilities must address
- Gives structure to the process in a rational way
- Identifies issues and outlines solution paths
- Is a living standard--regularly reviewed and updated to reflect changes in the industry, laws or regulations

Overview of RIOS

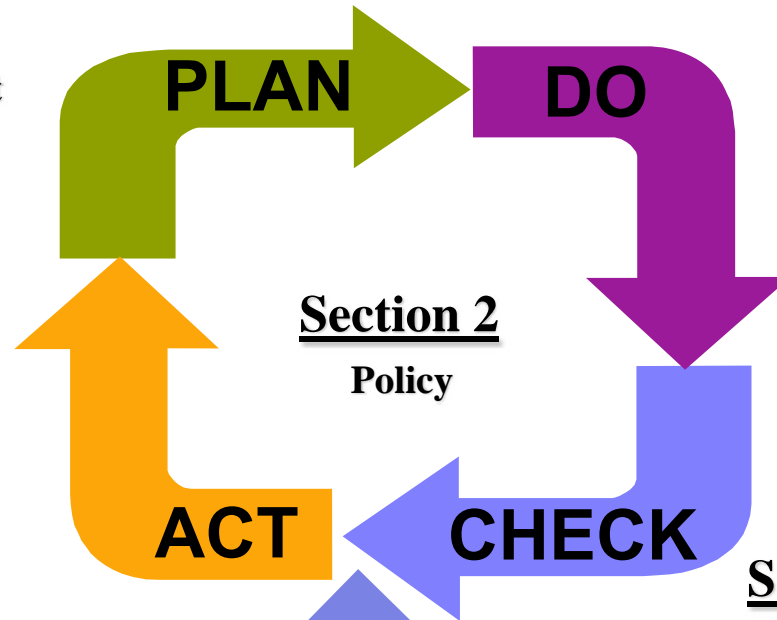
Section 3

Planning Requirements

- Defining the QEH&S Footprint
- Improvement Planning

Section 4

- Implementation Requirement



Section 5

Checking and Corrective Action Requirements

- Monitoring and measurement
- Nonconformance and corrective and preventive action
- QEH&S MS audit

Section 1

General Requirements

- Scope
- QEH&S Infrastructure

Section 6

Management Review Requirements

R2 Table of Contents



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EHSMS

- **Recyclers shall develop, document, fully implement, review at least annually and update a comprehensive, documented, environmental, health, and safety (EHS) management system (MS)**

R2/RIOS Goes Further Still with Regard to E-scrap

- R2/RIOS combines the strength of a comprehensive, integrated management system for the recycling industry (RIOS) with a consensus standard for the responsible recycling of e-scrap (R2), which was developed under the aegis of the U.S. Environmental Protection Agency, who brought all stakeholders together in a facilitated process in which EPA participated

R2 Focus Materials

Amongst other things, R2 "focuses" on certain materials of concern, particularly with regard to export

- Items containing polychlorinated biphenyls (PCBs)
- Items containing mercury
- CRTs and CRT glass
- Batteries
- 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

R2 Legal Requirements

- Legal - Recycler shall comply with all applicable environmental, health, and safety legal requirements and shall only export equipment and components containing FMs to countries that legally accept them
- Export - R2 prohibits exports to Non-OECD countries unless company can demonstrate legality of the import, and the facility can demonstrate and verify environmental and health and safety, and security standards are in place
- Reuse - Prior to shipping equipment containing FMs for reuse, repair, refurbishment, or remanufacturing, must test to ensure key functions are working properly or vendor is R2 certified themselves and follow protocol
- Data - sanitize, purge, or destroy data on hard drives and other data storage devices (phones, etc)

Downstream Due Diligence

Recyclers shall only do business with downstream vendors that conform to key R2 requirements to include:

- Comprehensive EHSMS
- Legal requirements
- Copies of environmental permits
- Downstream Vendor Conformity
- Reuse provisions
- Exporting provisions
- Tracking throughput

ISRI has supplemented R2 with recently adopted policy

ISRI supports increasing the sustainable benefits of responsibly recycling electronics in compliance with domestic and international legal requirements. A vital component of sustainable recycling is ensuring the free and fair trade of specification grade commodities into the global marketplace. These commodities provide raw material substitutes that are needed to develop economies around the world. ISRI also recognizes the inherent risks of exporting electronic equipment and components to countries and facilities that lack the expertise and technical capacity to process such shipments in a manner that is protective of worker safety, public health, and the environment. As such, ISRI strongly condemns “sham” recycling and illegal exports to countries and facilities that lack such expertise. In this context, ISRI supports policy that-

ISRI has supplemented R2 with recently adopted policy

- Recognizes the sustainable benefits of and supports necessary financial incentives to responsibly recycle electronic equipment and components in the United States.
- Promotes the free and fair trade of specification grade commodities derived from electronic equipment and components, including commodities with de minimis amounts of hazardous substances.
- Bans the export of electronic equipment and components for landfilling, or incineration for disposal.
- Requires that all shipments of used electronic equipment and components exported for direct reuse are effectively tested to confirm that key functions are working and that such equipment and components are not obsolete.
- Requires that all pre-existing data and data storage devices are sanitized, purged or destroyed prior to export, unless otherwise agreed to by a valid commercial agreement between the domestic buyer and seller.

ISRI has supplemented R2 with recently adopted policy

- Requires that all exports of electronic equipment, components and specification grade commodities are packaged and transported in a manner that is protective of human health and the environment and when appropriate prevents damage during transport.
- Requires that facilities engaged in electronics repair, refurbishment or processing located outside of the United States that import electronic equipment and components have in place:

ISRI has supplemented R2 with recently adopted policy

1. a documented, verifiable environmental, health and safety management system;
2. the necessary capability to reuse, refurbish or recycle electronic equipment and components in a manner protective of worker safety, public health and the environment;
3. adequate business records to document compliance with environmental, health and safety legal requirements including the legality of shipments in importing countries;
4. necessary measures in place to manage hazardous wastes in a safe and environmentally sustainable manner through final disposition; and,
5. a transparent process for each facility to demonstrate conformity to these requirements to the U.S. exporter

Acceptance by others:

- RIOS and R2/RIOS standards are recognized by the ANSI-ASQ National Accreditation Board (ANAB), which is the recognized body in the U.S. for the accreditation of third party registrars
- The Chinese government's State Administration of Quality Supervision, Inspection and Quarantine (AQSIQ) requires that all new applicants for a license to be an Overseas Enterprise Supplying Waste Raw Materials to China be registered to the ISO or RIOS standard to qualify
- Large number of registrations of companies to RIOS or R2/RIOS shows broad acceptance by the industry

To Sum it All Up...

RIOS provides a powerful management system framework for recyclers to use to drive continual improvement in their quality, environmental, and health & safety performance, helping recyclers in the U.S. and around the world to meet their commitment to safety and preservation of the environment.

What can ISRI do to help you?

ISRI has worked with various groups and recyclers trying to transfer knowledge that can improve their environmental performance and raise their efforts to protect the health and safety of their employees and the communities they operate in.

ISRI can also assist with introduction to equipment manufacturers in hopes of promoting technology transfer.

Thank You!

Scott J. Horne
General Counsel & Vice President—Government Affairs
Institute of Scrap Recycling Industries
Telephone: 202 662-8513
E-mail: ScottHorne@ISRI.org

For more info, visit: www.isri.org