Responsible Recycling Trends and Analysis

Robin K. Wiener
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New Orleans, LA
Overview

• Introduction to ISRI

• Trends in global demand for scrap commodities

• Trends relating to Quality, EH&S

• ISRI’s efforts regarding sustainable e-recycling
Over 1,550 member companies - 7,000+ facilities worldwide - that process, broker & consume scrap metals, paper, plastics, glass, textiles, rubber, and electronics.

~ 350 companies that process e-scrap for recycling
Industry employs over 100,000 in U.S. and has been creating “green jobs” for decades.

Many ISRI members have been in business for 3 generations or more.
Industry processes between 125 and 150 million tons annually of recyclables, destined for both domestic use and overseas markets, including:

<table>
<thead>
<tr>
<th>Commodities Processed</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Processed (million metric tons)</td>
<td>150</td>
<td>125</td>
</tr>
<tr>
<td>Value of Materials Processed (Billion US$)</td>
<td>86</td>
<td>54</td>
</tr>
<tr>
<td>Iron and Steel (metric tons)</td>
<td>85,000,000</td>
<td>71,000,000</td>
</tr>
<tr>
<td>Aluminum (metric tons)</td>
<td>5,500,000</td>
<td>4,600,000</td>
</tr>
<tr>
<td>Copper (metric tons)</td>
<td>1,800,000</td>
<td>1,700,000</td>
</tr>
<tr>
<td>Paper (metric tons)</td>
<td>47,000,000</td>
<td>45,400,000</td>
</tr>
<tr>
<td>Lead (metric tons)</td>
<td>1,200,000</td>
<td>1,300,000</td>
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</tbody>
</table>
Scrap is the 1st link in the global manufacturing supply chain, meeting more than 40% of industrial consumers’ raw material needs annually worldwide.

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Exported (million metric tons)</td>
<td>46</td>
<td>44</td>
</tr>
<tr>
<td>Value of Materials Exported (Billion US$)</td>
<td>28.6</td>
<td>21.4</td>
</tr>
<tr>
<td>Number of countries exported to</td>
<td>153</td>
<td>154</td>
</tr>
<tr>
<td>Aluminum exports (metric tons)</td>
<td>1,981,644</td>
<td>1,657,606</td>
</tr>
<tr>
<td>Copper (metric tons)</td>
<td>908,130</td>
<td>842,573</td>
</tr>
<tr>
<td>Iron and Steel (metric tons)</td>
<td>18,865,413</td>
<td>20,011,795</td>
</tr>
<tr>
<td>Zinc (metric tons)</td>
<td>90,992</td>
<td>47,119</td>
</tr>
</tbody>
</table>
## Worldwide Demand for Scrap Commodities

### Top International Trading Partners --

<table>
<thead>
<tr>
<th>Country</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>China ($US)</td>
<td>$8.0 billion</td>
<td>$7.4 billion</td>
</tr>
<tr>
<td>Canada</td>
<td>$4.0 billion</td>
<td>$2.6 billion</td>
</tr>
<tr>
<td>Turkey</td>
<td>$2.0 billion</td>
<td>$0.9 billion</td>
</tr>
<tr>
<td>South Korea</td>
<td>$2.0 billion</td>
<td>$1.4 billion</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>$1.9 billion</td>
<td>$0.7 billion</td>
</tr>
<tr>
<td>Switzerland</td>
<td>$1.7 billion</td>
<td>$3.3 billion</td>
</tr>
<tr>
<td>Taiwan</td>
<td>$1.6 billion</td>
<td>$0.9 billion</td>
</tr>
<tr>
<td>Japan</td>
<td>$1.0 billion</td>
<td>$0.3 billion</td>
</tr>
<tr>
<td>Germany</td>
<td>$1.0 billion</td>
<td>$0.04 billion</td>
</tr>
<tr>
<td>Mexico</td>
<td>$0.9 billion</td>
<td>$0.6 billion</td>
</tr>
</tbody>
</table>
Trends Relating to Quality, EH&S

• US scrap industry committed to not just delivering plentiful volumes of scrap, but delivering high quality scrap for both our domestic & international customers in an environmentally responsible manner

  – Technological advances have resulted in significant gains in scrap quality over the last several years.
  – Advances in data-sanitization technology and various separation technologies, including sorting and infra-red technology and shredding, as well as greater attention to preprocessing all have contributed to continuous quality improvements.
Dedication to Quality, EH&S

ISRI dedicated to doing all it can to promote the worldwide quality of scrap, processed in an environmentally responsible manner, protective of worker safety

- **RIOS®**
  - Voluntary, comprehensive environmental, health & safety, and quality management system that integrates the best aspects of ISO 14001, ISO 9001, and OHSAS 18001
  - Accredited certification program supported by the ANSI-ASQ National Accreditation Board (ANAB)
    - 21 facilities certified to R2/RIOS® or R2 (including 1 international)
    - More than 50 facilities working towards certification
Dedication to Quality, EH&S

• Design for Recycling®
  – Developed in early 1980s
  – Designed to encourage manufacturers to consider end-of-life issues of their products at the design stage

• ISRI Scrap Specifications Circular
  – Industry-wide, globally accepted set of descriptions and guidelines for industry grade scrap commodities
  – Facilitates the consistent & uniform trade of scrap recycling
  – Available at www.isri.org
**Dedication to Quality, EH&S**

- **ISRI Safety** launched Jan. 1, 2005
  - Provides comprehensive, consultation and training resources to ISRI members
  - Fundamental shift in focus –
    - From passive assistance to hands-on, pro-active training
    - From worker focus to management focus with goal of providing safety an equal seat at the table with profit and quality
  - Over last 5 years, ISRI provided approximately 300 Safety Blueprints, OSHA 10-hour training programs, and Driver “Ride-a-longs” at member facilities
    - All free of charge to ISRI members

www.ISRISafety.org
ISRI is Fully Committed to Electronics Recycling

ISRI Electronics Recycling Division Leadership
- Division Chair: Joe Clayton
- 1st Vice-Chair: Renee St. Denis
- 2nd Vice-Chair: Jake Player

Division Priorities
- Standards and Certification
- Commodity Specifications
- Education & Training
- Policy Development
ISRI’s export policy 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: e-recycling must be done right anywhere and everywhere in the world
Instead of banning trade the U.S. (and others) should teach developmental countries how to improve health and safety conditions and encourage environmentally responsible recycling practices.

Eric Williams, Asst. Professor Arizona State University
Journal of Environmental Science and Technology Journal 2010
Sustainable Electronics Recycling

Provides a real opportunity to boost environmental sustainability by sharing U.S. industry know-how, with the goal of growing responsible recycling

- At invitation of US/Chinese governments (& academia), ISRI has been engaged in China participating in forum to share knowledge/educate on best management practices
- Positive intervention has the potential to also boost economic development and job creation while effectively turning the tide on irresponsible recycling
3rd Party certification plays a critical role towards ensuring sustainable recycling

Proud of the R2/RIOS® Program – combines ISRI’s RIOS program with the R2 program

- Assures compliance with domestic & international laws, including laws enacted by countries that have signed/ratified Basel Convention
- R2 prohibits exports except where legal and only under specified conditions designed to protect the environment and workers
- Provides for strict management of focus materials through final disposition
- Requires downstream due diligence
- Integrates, quality, environment & health and safety

www.CertifiedElectronicsRecycler.com
R2 Solutions launched yesterday

- 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

“The R2 practices represent a significant accomplishment…[and] go beyond what the agency is able to legally require.”

United States Government Accountability Office Report, July 2010
In Summary

- ISRI is committed to supporting and encouraging a sustainable and responsible global recycling industry – whether in New Orleans or Guangzhou
  - Encourage others to get involved in the effort to help promote sustainable practices worldwide

Get certified...it’s the right thing to do
Thank You

For more information:
Robin K. Wiener
President
Institute of Scrap Recycling Industries, Inc.
robinwiener@isri.org
+1 202 662 8512
www.isri.org
www.CertifiedElectronicsRecycler.com