Outlook on Stainless Steel

Animesh Goenka
President & CEO
Steelbro International
Outlook on Stainless Steel

Optimistic
Optimistic Outlook on Stainless Steel

Outlook for Stainless Steel Scrap driven by growing demand and production levels

**Demand**
- Properties of Stainless Steel driving increasing applications
- 100% recyclability of Stainless Steel makes scrap ideal

**Production**
- Production and capacity growing world-wide
- China’s impact on supply

**Future of Stainless Steel Recycling**
Significant growth in Stainless Steel demand

Source: ISSF
Properties of Stainless Steel Driving Demand

Durable

- Resists corrosion, rust, & stains
- Maintains shine and luster
- Withstands high temperatures and corrosive chemicals

Conducive to Fabrication

- Ductile and strong
- 100% Recyclable
- Cheaper cost over lifespan of product
Utility of SS has increased across various industries

<table>
<thead>
<tr>
<th>Main application sectors</th>
<th>Use of finished SS in manufacturing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building</td>
<td>16%</td>
</tr>
<tr>
<td>Transportation</td>
<td>21%</td>
</tr>
<tr>
<td>Industrial machinery</td>
<td>31%</td>
</tr>
<tr>
<td>Household appliances</td>
<td>6%</td>
</tr>
<tr>
<td>Electronics</td>
<td>6%</td>
</tr>
<tr>
<td>Metal goods</td>
<td>20%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Yale University Study
ISSF – Team stainless
Stainless Steel Applications

Outlook on Stainless Steel
Chemical/Petrochemical
Pressure vessels, heat exchangers, crackling furnaces, tanks, chemical tankers, process pipes, etc.
Oil / Gas

Oil exploration (OCTG, umbilicals), sub-sea systems, offshore platforms, LNG tankers, etc.

Gas and Oil systems on offshore platforms
Automotive

Exhaust systems, engine valves, fuel injection components, structural parts, catalytic converters, automotive trim, etc.
Building & Construction, Architecture, Furniture
Elevators, escalators, roofing systems, facades, bridges, ornamental Tubes (e.g. handrails), light poles, furniture, sewage systems, potable water pipes, etc.
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Elevators, escalators, roofing systems, facades, bridges, ornamental Tubes (e.g. handrails), light poles, furniture, sewage systems, potable water pipes, etc.

Pittsburgh Convention Centre
• The only meeting venue with Gold LEED® Certification
• Stainless steel 304 roof
Home Appliances / Utensils

Washing machines, dishwashers, microwaves, refrigerators, sinks, cutlery, kitchen utensils, etc.
Significant growth in Stainless Steel demand

Source: ISSF
Production
Outlook on Stainless Steel
Production by Major Mills Globally

13 of the Top 20 are Asian!

* HRC, CRC, Plate, rolled products
** incl. Fujian Deshang

Source: SMR, 2010
## Worldwide SS production by Region 2005-2014

<table>
<thead>
<tr>
<th>Region</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014 (Fst Hlf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>America</td>
<td>2,688</td>
<td>2,951</td>
<td>2,604</td>
<td>2,315</td>
<td>1,942</td>
<td>2,609</td>
<td>2,486</td>
<td>2,368</td>
<td>2,454</td>
<td>1,386</td>
</tr>
<tr>
<td>EUAfrica</td>
<td>8,795</td>
<td>10,000</td>
<td>8,669</td>
<td>8,272</td>
<td>6,449</td>
<td>7,878</td>
<td>7,883</td>
<td>7,829</td>
<td>7,496</td>
<td>4,273</td>
</tr>
<tr>
<td>Asia w/o China</td>
<td>9,593</td>
<td>10,081</td>
<td>9,304</td>
<td>8,356</td>
<td>7,472</td>
<td>9,011</td>
<td>8,770</td>
<td>8,720</td>
<td>8,788</td>
<td>4,450</td>
</tr>
<tr>
<td>China</td>
<td>3,160</td>
<td>5,299</td>
<td>7,206</td>
<td>6,943</td>
<td>8,805</td>
<td>11,256</td>
<td>14,091</td>
<td>16,087</td>
<td>18,984</td>
<td>10,687</td>
</tr>
<tr>
<td>CEE</td>
<td>310</td>
<td>376</td>
<td>364</td>
<td>333</td>
<td>237</td>
<td>340</td>
<td>391</td>
<td>359</td>
<td>296r</td>
<td>143</td>
</tr>
<tr>
<td>World</td>
<td>24,546</td>
<td>28,706</td>
<td>28,146</td>
<td>26,218</td>
<td>24,904</td>
<td>31,094</td>
<td>33,621</td>
<td>35,363</td>
<td>38,018r</td>
<td>20,939</td>
</tr>
</tbody>
</table>

Source: ISSF
World Production of SS by Region

Crude Steel Production (In '000 mt)

Year

Production

Americas
EU Africa
Asia w/o China
China r
CEE
Production by Major Mills Globally

13 of the Top 20 are Asian!

Source: SMR, 2010

* HRC, CRC, Plate, rolled products
** incl. Fujian Deshang
Asia is Primed for Growth

Per Capita STS Consumption (kg)

- India
- China
- Europe
- Russia
- America

Source: Global scrap.com
## Optimistic Outlook on Stainless Steel

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<th>Production</th>
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| • Properties of Stainless Steel driving increasing applications  
  • 100% recyclability of Stainless Steel makes scrap ideal | • Production and capacity growing world-wide  
  • China’s impact on supply |

## Future of Stainless Steel Recycling
Stainless steel Recycling

- Stainless steel is 100% recyclable.
- SS scrap is a direct substitute for prime raw-materials...which is nickel, chrome and pig iron.
- There is no recycled stainless. Scrap is melted and refined to produce prime stainless steel.
- Mills rather use ss scrap as their raw material because it is cheaper to produce stainless steel using scrap than prime materials.
  1) Less energy used.
  2) Cheaper input cost.
- There is always demand for ss scrap. Supply is always short.
- All this lends to a great future for stainless recyclers.
Stainless Scrap Processing