REGIONAL ISS INDUSTRY PERSPECTIVES

Presentation by James D. Schultz, American Iron and Steel Institute. Steel Committee meeting 7-8 November 2006.

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OECD Steel Committee – IEA – IISI

Regional ISS Industry Perspectives

November 7, 2006
Paris, France

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American Iron and Steel Institute

Regional Perspectives - NAFTA

- Steel Production – Current, Forecast, Barriers to Investment
- Policy Approaches – Energy Efficiency/Climate Issues
- Energy Usage/Greenhouse Gas Emissions – History/Forecasts
- Recommendations
Steel Production – Current and Forecast

**NAFTA RAW STEEL PRODUCTION**

<table>
<thead>
<tr>
<th>YEAR</th>
<th>TOTAL</th>
<th>Basic Oxy.</th>
<th>Electric</th>
<th>Basic Oxy.</th>
<th>Electric</th>
<th>Basic Oxy.</th>
<th>Electric</th>
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<tbody>
<tr>
<td>2006*</td>
<td>143,627</td>
<td>48,587</td>
<td>63,132</td>
<td>9,481</td>
<td>6,550</td>
<td>3,839</td>
<td>12,038</td>
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<tr>
<td>2005</td>
<td>139,354</td>
<td>47,073</td>
<td>57,533</td>
<td>9,884</td>
<td>7,012</td>
<td>4,966</td>
<td>12,886</td>
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<tr>
<td>2004</td>
<td>146,180</td>
<td>52,595</td>
<td>57,285</td>
<td>10,638</td>
<td>7,221</td>
<td>5,240</td>
<td>13,192</td>
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<tr>
<td>2003</td>
<td>137,443</td>
<td>50,367</td>
<td>52,694</td>
<td>10,247</td>
<td>7,204</td>
<td>5,061</td>
<td>11,670</td>
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<tr>
<td>2002</td>
<td>133,979</td>
<td>50,114</td>
<td>50,843</td>
<td>10,419</td>
<td>7,113</td>
<td>4,538</td>
<td>10,950</td>
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<tr>
<td>2001</td>
<td>130,712</td>
<td>52,204</td>
<td>47,311</td>
<td>9,740</td>
<td>6,992</td>
<td>5,258</td>
<td>9,401</td>
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</table>

*2006: Annualized based on seven months actual data.

**NAFTA STEEL USE FORECASTS**

<table>
<thead>
<tr>
<th>Apparent Steel Use</th>
<th>percent change</th>
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<tbody>
<tr>
<td><strong>2005</strong></td>
<td><strong>2006</strong></td>
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<tr>
<td>NAFTA</td>
<td>135.8</td>
</tr>
<tr>
<td>USA</td>
<td>102.5</td>
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<tr>
<td>CANADA</td>
<td>16.2</td>
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<tr>
<td>MEXICO</td>
<td>16.1</td>
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</table>

IISI forecasts for the NAFTA region as a whole predict a sizable increase in demand for 2006, but less growth in 2007. The extended forecast (thru 2010) is for an average growth of 1.9 percent.

Steel Production – Investment Barriers

- Environmental Issues
- Regulatory Requirements
- Return on Investment
- Government Co-investment
- Energy Availability/Costs
Policy Approaches – NAFTA Countries

- USA – Voluntary, Technology Focus, Intensity Based, Targets.
- Canada – Mandatory, BATEA, Intensity Based, Starting 2010, Targets.

Policy Approaches – USA

- Climate Initiative – Voluntary – Growth Based
- 18% Intensity Target – Tied to GDP – by 2012
- Technology Focus – Incentives to Develop and Deploy
- Multiple Programs – Industry/Steel
  - Climate VISION – DOE
  - Asia Pacific Partnership
  - Climate Leaders – EPA
- Slow Greenhouse Gas Emissions
  Growth/Stabilize/Reduce – Long Term Strategy
Policy Approaches - Canada

- Kyoto Ratified Dec 2002
- Mandatory Reporting total facility GHGs 2004 and beyond
- New Federal Gov’t (Jan 2006) managing GHGs through
  - Clean Air Act introduced Oct 2006
- Key Industry Sectors (includes steel)
  - Intensity Based targets to be finalized 2008
  - Regulations to take effect 2010
- GHG Target Timelines:
  - 2010-2015: Emissions Intensity
  - 2020-2025: Emissions intensity that results in absolute reductions; supporting the establishment of a fixed cap
  - 2050: absolute reductions of 45-65%
- Memorandum of Understanding – Steel Industry, Gov’ts of Canada & Ontario signed January 2005
  - Process Approach/Benchmarking/Targets
  - Respective of competitiveness issues of the industry
  - Support for research into longer-term breakthrough technologies

Policy Approaches - Mexico

- Kyoto Beneficiary
- Inventory Plan – Emissions – WRI/IISI?
- CDM – Projects Under Development
- Voluntary Reduction Goal Discussion
Energy Use/GHG Emissions – USA Steel

- Energy Usage
  - Down 28% Since 1990
- Greenhouse Gas Emissions
  - Down 39% Since 1990
- Forecast
  - Climate Vision Goal
    • Down 13.2% Since 2002

USA - Energy Efficiency

Energy Efficiency Improvements

28% Reduction

*MBTU/Per Ton Shipped
USA - Energy Protocol

USA - GHG Emissions

Iron and Steel Production
U.S. GHG Emission Trends

Energy Use/GHG Emissions – Canada 2003

● Energy Intensity
  – Down 26% Since 1990*
● Greenhouse Gas Emissions (absolute)
  – Down 17% Since 1990*
● Greenhouse Gas Emissions Intensity
  – Down 30% Since 1990*

*1990: Adjusted to remove effect of major labour outage

Canada - Energy Efficiency

Energy Efficiency Improvements

42% Reduction

Source: CSPA, AISI and DOE

*MBTU/Per Ton Shipped
Canada - GHG Emissions

<table>
<thead>
<tr>
<th>Year</th>
<th>CO₂ (Mt)</th>
<th>Intensity (kgCO₂/t)</th>
<th>Reduction from 1990 (%)</th>
<th>Intensity decrease (%)</th>
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<tbody>
<tr>
<td>1989</td>
<td>18.6</td>
<td>1210</td>
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<td>17.4</td>
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<td>11.70</td>
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<td>15.3</td>
<td>1190</td>
<td>11.15</td>
<td>7.39</td>
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<td>1993</td>
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<td>1080</td>
<td>9.99</td>
<td>8.06</td>
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<td>1133</td>
<td>10.72</td>
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<td>1995</td>
<td>15.5</td>
<td>1084</td>
<td>10.01</td>
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<tr>
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<td>908</td>
<td>17.27</td>
<td>26.34</td>
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<tr>
<td>2004</td>
<td>15.4</td>
<td>1010</td>
<td>13.00</td>
<td>22.00</td>
</tr>
</tbody>
</table>

Mexico - Energy Efficiency

*Source: Sener, BNE*
Recommendations – IEA Effort – NAFTA Perspective

- Latest IEA Report
  - Academic Versus Real World
  - Best Available Technologies and Practices Need Work
  - Tables and Data Need Work – Old/Incomplete
  - BOF Gas Utilization/EAF Analysis Inadequate
  - Unverified Data – Omit
  - BOF Versus EAF – Incomplete
  - Beehive Versus Non-Recovery – Conclusions Doubtful
  - Conclusions/Recommendations Lacking
  - Recycling Opportunity Missed

Recommendations – IEA Effort – NAFTA Perspective Cont’d

- Data Gathering – Critical Element – Simple
- Draft Review by Steel Industry – Critical Element
- Asia Pacific Partnership – Great Resource
- Punitive Approach – Unintended Consequences
- Solutions That Raise Energy Costs – Indirect Consequences
- Solutions Can Penalize Most Efficient Steel Producers
- Solutions Must Be Global – Problem is Global
- Intensity Focus – Excellent
- Country Indicators – Critical Component
- Options for Improvement – Workshop Approach?
- Sector Approach – Worth Considering
- Thank You -

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