IRON & STEEL INDUSTRY IN SOUTHEAST ASIA

Presentation by Tan Ah Yong, Secretary General, South East Asia Iron and Steel Institute (SEAISI)

15-16 December 2008

This document prepared by the South East Asia Iron and Steel Institute (SEAISI) will be presented under Session One of the workshop on Steel and Related Raw Materials.

(Please note that this document is only available in pdf)

Anthony de Carvalho, Administrator, Structural Policy Division
Tel: +(33-1) 45 24 93 77, Fax: +(33-1) 44 30 62 63, E-mail: Anthony.decarvalho@oecd.org
Iron & Steel Industry in South East Asia

South East Asia Iron and Steel Institute (SEAISI)

CONTENTS

- Industry Structure
  - Steel consumption
  - Demand and Supply
  - Raw Material Supply
  - Future Direction
  - Impact of Economic Crisis
Iron and Steel Industry Structure in ASEAN-6 countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Iron making</th>
<th>Steel making</th>
<th>Rolling/Finished Products</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DRI/HBI</td>
<td>Slab</td>
<td>Billet</td>
</tr>
<tr>
<td>Indonesia</td>
<td>1</td>
<td>17</td>
<td>4</td>
</tr>
<tr>
<td>Malaysia</td>
<td>2</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Philippines</td>
<td>-</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>Singapore</td>
<td>-</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Thailand</td>
<td>-</td>
<td>15</td>
<td>6</td>
</tr>
<tr>
<td>Vietnam</td>
<td>-</td>
<td>&gt;6</td>
<td>-</td>
</tr>
</tbody>
</table>

Total Capacity (mt) 3.8 7.9 18.4 17.0 8.0 7.2 47.8

Source: SEAISI 2008 Statistical Year Book

Steel Industry - Current Status

- **Small producers** (crude steel capacity of largest producer: 4.5 million tonnes)
- All steelmakers are utilizing EAF
- Weak supply chain structure
- Heavy dependence on imports
  - Limited and unbalanced capacities
  - Very limited raw material availability (scrap, iron ore)
  - Significant reliance on import of quality steel (Automotive, Electronics, Appliances, Bolts and nuts)
- The region’s steelmakers are mostly serving commercial grade steel with low margin
Economy in ASEAN is expected to slow down in 2008 and 2009.

Source: Various Sources
ASEAN steel consumption has grown steadily

![Graph showing apparent steel consumption from 1998 to 2007 for ASEAN countries, with data points for each country and a forecast for 2008.](image1)

Remarks

Apparent Steel Consumption (million tonnes)

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>CAGR '98-07</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>25.49</td>
<td>9.1%</td>
</tr>
<tr>
<td>Import</td>
<td>27.81</td>
<td>9.5%</td>
</tr>
<tr>
<td>Export</td>
<td>9.90</td>
<td>9.5%</td>
</tr>
<tr>
<td>Consumption</td>
<td>43.40</td>
<td>9.3%</td>
</tr>
</tbody>
</table>

**Estimated Figures**

<table>
<thead>
<tr>
<th></th>
<th>H1 2008 (m t)</th>
<th>%change y-o-y</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thailand</td>
<td>7.45</td>
<td>13.6%</td>
</tr>
<tr>
<td>Vietnam</td>
<td>5.29</td>
<td>10.5%</td>
</tr>
<tr>
<td>Malaysia</td>
<td>4.10</td>
<td>5.7%</td>
</tr>
<tr>
<td>Indonesia</td>
<td>5.46</td>
<td>24.2%</td>
</tr>
<tr>
<td>Philippines</td>
<td>1.57</td>
<td>-9.5%</td>
</tr>
<tr>
<td>Singapore</td>
<td>1.31</td>
<td>-11.9%</td>
</tr>
<tr>
<td>ASEAN</td>
<td>25.18</td>
<td>10.2%</td>
</tr>
</tbody>
</table>

Source: SEAISI
Steel production capacity and utilization in the region in 2007

(in million tonnes)

**Longs**
- Section
- Bar
- Wire rod

Production: 16.4
Longs capacity utilization: 34% (36%)*

**Flats**
- HRP
- HRC
- CRC
- Coated
- Pipe

Production: 20
Flat capacity utilization: 63% (64%)*

**Semis**

Production: 20
Semis capacity utilization: 76% (72%)*

* Forecast Capacity Utilization in 2008

Source: SEAISI

*Forecast Capacity Utilization in 2008
ASEAN semis consumption has increased, with significant reliance on imports

**Semi finished steel consumption**

Unit: million tonnes

<table>
<thead>
<tr>
<th>Year</th>
<th>Domestic Supply</th>
<th>Import</th>
<th>Export</th>
<th>Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>2.3</td>
<td>12.9</td>
<td>0.3</td>
<td>15.5</td>
</tr>
<tr>
<td>2000</td>
<td>2.5</td>
<td>13.9</td>
<td>0.3</td>
<td>16.7</td>
</tr>
<tr>
<td>2001</td>
<td>2.9</td>
<td>13.0</td>
<td>0.3</td>
<td>16.2</td>
</tr>
<tr>
<td>2002</td>
<td>2.3</td>
<td>13.8</td>
<td>0.3</td>
<td>16.4</td>
</tr>
<tr>
<td>2003</td>
<td>2.7</td>
<td>14.9</td>
<td>0.3</td>
<td>17.9</td>
</tr>
<tr>
<td>2004</td>
<td>2.2</td>
<td>16.5</td>
<td>0.3</td>
<td>19.0</td>
</tr>
<tr>
<td>2005</td>
<td>2.5</td>
<td>17.9</td>
<td>0.3</td>
<td>20.7</td>
</tr>
<tr>
<td>2006</td>
<td>2.8</td>
<td>18.2</td>
<td>0.3</td>
<td>21.3</td>
</tr>
<tr>
<td>2007</td>
<td>3.0</td>
<td>19.4</td>
<td>0.3</td>
<td>23.0</td>
</tr>
</tbody>
</table>

Demand and supply – long products* in 2007

**Estimated Figures**

<table>
<thead>
<tr>
<th>Category</th>
<th>Unit: million tonnes</th>
<th>CAGR 98-07</th>
<th>% change H1’07-H1’08</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumption</td>
<td>19.8</td>
<td>7.5%</td>
<td>10.5%</td>
</tr>
<tr>
<td>Production</td>
<td>16.4</td>
<td>7.1%</td>
<td>13.6%</td>
</tr>
<tr>
<td>Import</td>
<td>5.3</td>
<td>7.9%</td>
<td>5.1%</td>
</tr>
<tr>
<td>Export</td>
<td>1.9</td>
<td>5.1%</td>
<td>19.9%</td>
</tr>
</tbody>
</table>

- Bulk of long products produced is of commercial grades
- Mainly to meet general application in construction sector
- Needs for high grade long products met by imports.
- Major sources of supply from Japan, Korea and Taiwan
- Export is mainly to neighbouring countries

* For section, bar and wire rod

Source: SEAISI
Demand and supply – flat products* in 2007

- Bulk of flat steel produced is of commercial grades
- Around 60% of flat steel consumption goes to general application in construction sector and shipbuilding
- Needs for high grade flat products met by imports
- Major sources of supply from Japan, Korea and Taiwan
- ASEAN has capability to export flat product, but volume not consistent, depending upon global market condition

Source: SEAISI

* For HRP, HRC, CRC, Coated and Pipe

Imports of long product still significant, mainly for high grades.

- Export:
  - Vietnam 15%
  - Indonesia 12%
  - Malaysia 25%
  - Singapore 24%

- Import:
  - Vietnam 15%
  - Indonesia 15%
  - Malaysia 12%
  - Philippines 7%
  - Singapore 22%

Source: SEAISI
Imports of flat product have surged over the years.

**Exports and Imports of Flat Product**

- **Exports**
  - Year 2000: 2.1 million tonnes
  - Year 2001: 2.6 million tonnes
  - Year 2002: 3.3 million tonnes
  - Year 2003: 4.4 million tonnes
  - Year 2004: 5.8 million tonnes
  - Year 2005: 10.7 million tonnes
  - Year 2007: 12.3 million tonnes

- **Imports**
  - Year 2000: 0.7 million tonnes
  - Year 2001: 2.3 million tonnes
  - Year 2002: 3.2 million tonnes
  - Year 2003: 3.6 million tonnes
  - Year 2004: 4.9 million tonnes
  - Year 2005: 5.8 million tonnes
  - Year 2007: 7.7 million tonnes

**Source:** SEAISI

**Unit:** million tonnes

**Imports of flat product have surged over the years.**

**Export H1 2008**
- Vietnam: 19%
- Indonesia: 19%
- Malaysia: 28%
- Singapore: 12%
- Philippines: 2%

**Import H1 2008**
- Vietnam: 19%
- Indonesia: 19%
- Malaysia: 28%
- Singapore: 12%
- Philippines: 2%

**CONTENTS**

- Industry Structure
- Steel consumption
- Demand and Supply
- Raw Material Supply
- Future Direction
- Impact of Economic Crisis
Positioning of ASEAN steel industry

Regional supply of iron & semi-finished steel

- Steel-making in ASEAN through EAF route – dependence on ferrous steel scrap
- Large imports of scrap – 8 million tonnes in 2007 (total consumption: 16 million tonnes)
- Only two countries i.e., Malaysia and Indonesia produce scrap substitutes (DRI and HBI)

Source: SEAISI
## Future Direction

### Investment plans (at various stages)

<table>
<thead>
<tr>
<th>Indonesia</th>
<th>Malaysia</th>
<th>Vietnam</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Krakatau Steel</strong>&lt;br&gt;Hot Strip Mill &lt;br&gt;+400,000 tpy</td>
<td>Melawar&lt;br&gt;1.5mtpy&lt;br&gt;Integrated Mill (DR-HR)</td>
<td>POSCO&lt;br&gt;CRC 1.2mtpy&lt;br&gt;HRC 3mtpy</td>
</tr>
<tr>
<td><strong>BlueScope Steel</strong>&lt;br&gt;New coating line &lt;br&gt;170,000 tpy</td>
<td>Eastern Mill&lt;br&gt;1.5mtpy&lt;br&gt;BF = Steelmaking</td>
<td>Phu My&lt;br&gt;CRC 0.45mtpy</td>
</tr>
<tr>
<td><strong>Meratus Jaya</strong>&lt;br&gt;Ironmaking&lt;br&gt;315,000 tpy</td>
<td>Lion Group&lt;br&gt;DR 1.54mtpy&lt;br&gt;BF 2.5mtpy&lt;br&gt;HRC 3.2mtpy</td>
<td>Lotus&lt;br&gt;CRC 0.18mtpy</td>
</tr>
<tr>
<td><strong>Ann Joo</strong>&lt;br&gt;BF 0.5mtpy&lt;br&gt;Plate, Narrow Strip</td>
<td>Sunco&lt;br&gt;CRC 0.2mtpy</td>
<td><strong>Lion Group</strong>&lt;br&gt;HRC 4.5mtpy</td>
</tr>
<tr>
<td><strong>Perwaja</strong>&lt;br&gt;BF 0.8mtpy</td>
<td>Cuu Long – Vinashin&lt;br&gt;Plate 0.3mtpy</td>
<td></td>
</tr>
<tr>
<td><strong>Mycron</strong>&lt;br&gt;Hot Strip Mill</td>
<td>Esaar – VnSteel&lt;br&gt;ISM</td>
<td></td>
</tr>
</tbody>
</table>
Investment plans (cont.)

<table>
<thead>
<tr>
<th>Vietnam</th>
<th>Thailand</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>6 Billet Plants – EAF</strong></td>
<td><strong>7 Billet Plants – BF</strong></td>
</tr>
<tr>
<td>Thep Viet</td>
<td>TISCO</td>
</tr>
<tr>
<td>VnSteel</td>
<td>Hoa Phat</td>
</tr>
<tr>
<td>Van Loi</td>
<td>Dinh Vu</td>
</tr>
<tr>
<td>Dinh Vu</td>
<td>Van Loi</td>
</tr>
<tr>
<td>Hoa Phat</td>
<td>Cuu Long – Vinashin</td>
</tr>
<tr>
<td>Hung Tai</td>
<td>VinSteel – Kunming</td>
</tr>
<tr>
<td><strong>4.5 mtpy</strong></td>
<td><strong>VINACOMIN</strong></td>
</tr>
<tr>
<td><strong>3 Billet Plants</strong></td>
<td><strong>Sahaviriya - BF</strong></td>
</tr>
<tr>
<td>Thai Intersteel</td>
<td>4.5 mtpy</td>
</tr>
<tr>
<td>TBS Steel</td>
<td><strong>Bangpakong</strong></td>
</tr>
<tr>
<td>Chow Steel</td>
<td>Plate mill</td>
</tr>
<tr>
<td><strong>Siam Yamato</strong></td>
<td>+0.2mtpy bloom/billet</td>
</tr>
<tr>
<td>+0.5mtpy profile</td>
<td>+0.5mtpy profile</td>
</tr>
</tbody>
</table>

Future Direction (cont.)

- The region is moving towards vertical integration to have larger scale of operation, stronger supply chain and lower cost.
- The region’s steel industry will be less dependent on imports of:
  - Scrap
  - Semis
  - Finished steel.
- Small-scale scrap based steelmaking may not be favourable in the long term. However, in the short/medium term scrap would remain the main feed for EAF steelmaking.
Impact of Economic Crisis

❖ Delay in implementation of projects
❖ Production cut e.g.
  ✓ Krakatau Steel, Indonesia to halt four of its five EAF for 2 months starting from December 2008
  ✓ Gunung Garuda Group, Indonesia has cut production of beams by 60-70%.
  ✓ Perwaja and Kinsteel has cut up to 35% of steel production since September 2008

❖ Other developments
  ✓ Indonesia is investigating complains of dumping of hot rolled plate from Taiwan, China and Malaysia
  ✓ Malaysia is reviewing its tariff structure for steel products
  ✓ Vietnam: revised export duties
    - Billet: from 10% to 5% (effective 6 Oct 2008), and further reduced to 0% (effective 17 Nov 2008)
  ✓ Vietnam: increased import duties on
    - CRC: from 5% to 7% (effective 12 October 2008)
    - Long products (bar, wire rod, small-medium section, steel wire): MITI proposed to MOF to increase the duty from 8% to 20%

❖ Short term demand driven by construction and infrastructure development activities
❖ Long term move towards vertical integration will continue