World Industry Supply Trends

Global Sponge Capacity Developments

Henry S. Seiner
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Disclaimer

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Presentation Outline

- What a Difference a Year Makes?
  - Consumer’s Perspective
  - Producer’s Perspective
- Sponge Producer Profiles
  - North America Producers
  - Japanese Producers
  - Other Producers
- Advantages and Disadvantages
  - Key Characteristics
  - Integration, Location, Market Profile, etc
- What Does the Future Hold?
# 2008 ITA - Balanced Portfolio

- Sponge versus Scrap
- Captive versus Purchased Sponge
- Spot Market versus Long Term Agreement
- Quality Requirements
- Regional Considerations

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<tr>
<td>Capital Investment ?</td>
<td>Inventory Management ?</td>
<td>Technology ?</td>
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<tr>
<td>Control ?</td>
<td>Flexibility ?</td>
<td>Environmental ?</td>
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<tr>
<td>Quantity ?</td>
<td>Shortages ?</td>
<td>New Entrants ?</td>
</tr>
<tr>
<td>Volume Confidence ?</td>
<td>Excess Supply ?</td>
<td>Tariffs ?</td>
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<td>Pricing ?</td>
<td>Duration ?</td>
<td>Currency Exchange ?</td>
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### 2009 ITA – Producer’s Dilemma

- Weathering the Storm
- Cash versus Profit Perspective
- Relative Strengths and Weaknesses
- Cost Structure
- Environmental Considerations

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Sponge Capacity - USA

Titanium Metals Corporation (TIMET)

- Henderson, Nevada sponge plant
  - Announced expansion plan May 2005
  - Completed 47% expansion in 2007 from 8,600 to 12,600 mts / year
  - Reached practical capacity in early 2008
- Long term sponge supply agreements through mid-2020’s
- Mill and Melted products producer with plants in US & EU
- Strong scrap capability with 5 EB furnaces in Pennsylvania
- Capital expenditures and investments of $101M in 2006, $150M in 2007 and $121M in 2008
  - Includes expansion for sponge, melting, forging, heat treating, rolling and finishing
Sponge Capacity - USA (cont.)

Allegheny Technologies Incorporated

- Albany, Oregon Plant (non-integrated)
  - July 2005 announced re-start of plant shuttered in 2001
  - Production re-started in 2006
  - As of late Q108, capacity exists to produce up to 10,000 mt

- Rowley, Utah (partially integrated)
  - June 2006 announcement of 10,900 mt green-field plant for $325M to begin production in Q308
  - Magnesium recovery in conjunction with US Mag
  - July 2008 expectation for 10,900 mt plant start-up Q109 for $460M – infrastructure to support additional 8,200 mts
  - Total potential of 19,000 mts in Utah alone

- Combined capital investment of approx. $600M

Source: ATI Press Releases and SEC Filings
Sponge Capacity - USA (cont.)

- Current situation
  - July 2009 announced plan to idle Albany plant 7/31/09
  - Begin production at Rowley plant by end Q309
  - Long term sponge supply agreements

- Other capital expenditures – 4 year total $1.3B
  - NC ti & super-alloy forging facility ($260M) Q309 start
  - PA upgrade & expand ti & specialty plate facility ($60M)
  - Total above excl. $1.16B PA ti capable hot rolling project

- Diversified specialty metals producer
  - Captive outlet for produced sponge
  - Volume leverage in multi-metals for cap-ex & operations

Source: ATI Press Releases and SEC Filings
Sponge Capacity – USA (cont.)

RTI International Metals, Inc.

- September 2007 announced investment of $300M green-field plant (Hamilton, MS) up to 9,000 mts per year
- March 2008 announced long-term tetrachloride supply agreement with Tronox Inc. from contiguous plant
  - April 2009 announced delay of about a year
  - July 2009 announced indefinite delay:
    - $60M spent to date with additional $40M committed
    - “Will monitor market conditions in relation to the timing of future capital expenditures”
    - “Will assess potential alternative sourcing options for sponge supply”
    - “May result in further delay, idling or abandonment of the sponge plant project”
- $100M additional cap-ex for melting, forging and rolling facilities

Source: RTI Press Release and SEC Filings
Sponge Capacity – Japan
Osaka Titanium technologies Co., Ltd.

- Background information:
  - Formerly Sumitomo Titanium
  - Principal shareholders with equivalent stakes (23.91% each) are Kobe Steel and Sumitomo Metals
  - Producing titanium sponge since early 1950’s
  - Amagasaki Plant capacity increases:

Source: Roskill Information Services and Company Annual Report 2008
Sponge Capacity - Japan (cont.)

- **Current Situation:**
  - Delayed 2009-10 increases from 32,000 to 41,000 to 2011
    - ~80% complete
  - Run rate estimated at 40-50% of 32,000 capacity

- **Capital expenditures 2007-2009**
  - ¥65B – equivalent to $650-$700M
  - New site at Kishiwada (30-40 minutes from Amagasaki)
  - Melting capacity from 7,000 to 10,000 mts
  - Polycrystalline Silicon from 800 to 1,400 mts
  - High Purity capacity from 166 to 300 mts

- **Reduced reliance on conventional sponge & CP Ingot**
  - Aim to establish export supply chain for alloy ingot
  - ¥2B to scale up continuous ti-oxide or ti-chloride low cost sponge method
  - “Other Business” 26% of revenue year ending March 08
  - “Third Pillar” - Environmental and Energy products

Source: Company Annual Report 2008 and Press Releases
Toho Titanium Co., Ltd.

- Principal shareholders are Nippon Mining (42.5%), Nippon Steel (4.9%) & Mitsui & Co (3.3%)

- Chigasaki Plant
  - Producing titanium sponge since 1954
  - Output in 2007 was 14,200 mts
  - Capacity increased to 16,000 mts by end 2007
  - Further expansion to 22,000 mts may be possible

- Wakamatsu Plant in Kita-Kyushu City
  - Original plan to start late 2009 (¥43.2B/$425 to $450M)
  - Annual capacity of 12,000 mts
  - Further expansion to 24,000 mts possible

Sponge Capacity - Japan (cont.)

Current Situation
- March 2009 announcement
  - Delay start of new plant by 4 months to April, 2010
  - Reduce operating rate of existing plant to 54%
  - Compensation / salary reductions

Reliance on conventional sponge and ingot

- Sponge and Ingot account for 55% of revenue
- Non-titanium segments (catalysts, electronic materials and environmental analysis account for only 23% of sales

Sponge Capacity – Kazakhstan

Ust-Kamenogorsk Titanium and Magnesium Plant (UKTMP)

- Controlled by Specialty Metals – Brussels Belgium
- Achieved better than 25,000 mts of output in 2007
- Estimated 2009 production 35% or more below 2007 peak
- Capital investment into backward and forward integration
  - Raw materials and slag processing to control costs
  - Melting in Kazakhstan (late 2009 / early 2010 start) 10,000-12,000 tpy
  - Forging joint venture with Aubert et Duval in France
- New strategic model
  - Formerly 100% merchant sponge seller to mills
  - Evolving downstream and toward end users
- 1H09 profit of $10M versus 1H08 profit of $3M

Sponge Capacity – Ukraine
Zaporozhye Titanium & Magnesium Combine (ZTMC)

- State owned
- Merchant sponge supplier
- No long-term contracts or captive outlets to provide base load in weak market conditions
- Rumored to be running at very low rate in 2009
- Early 2009 government initiative to consolidate national titanium interests into a state holding company – progress uncertain

Source: International Titanium Association Statistical Review, Metal Pages, Kyiv Post and Company Sources
Sponge Capacity – Russia
VSMPO-AVISMA

- Implementing “Titanium 44+” to expand AVISMA to 44,000 tonnes per year by 2012
  - Increase vessel output from 4.0 to 4.8 mts per reduction
  - Reconstruct 2nd sponge building for 10,000 mts per year

- Significant capital invested in AVISMA over past 3 years
  - 49.3% of 6.2B rubles ($260M) in 2008
  - 43.5% of 12.8B rubles ($520M) in 2006-2008
  - Includes environmental and power supply projects

- Expansion implementation time-lines delayed 2 to 3 years
  - Unconfirmed estimates of 2009 run rate at 75% of 2007/2008 output

Sponge Capacity – China

- 13 producers - 86,000 tonnes per year
  - 21% increase from Q108 after 4-year steep climb

- Mixed degrees of integration and state support

- Q109 output at 42% of capacity:
  - 10% higher than Q108
  - At least 5 of 13 producers stopped entirely
  - Only 1 appears operating near capacity
  - Only 3 at > 5,000 tonne per year rate

- State strategic reserve – 10,000 ingot tonnes

- August report - continued sluggish demand & price erosion
  - No export market for sponge & little for fe-ti (40t-1h09 vs 1660-1h 08)

Source: Metal-Pages, Chinese Titanium Society, Metalprices.com
Whether one chooses a base year of 2002 (2002 = 100) or a base year of 2005 (2005 = 100), conclusions are the same:

- Less than perfect correlation between market value of commodities
- Upper hand and relative position changes dramatically over time

Pendulum certainly has swung hard to the favor of scrap in past year

Source: metalprices.com and TIMET Internal Estimates
# Discussion of Characteristics

- **Common Themes / Varied Approaches**
  - Financial implications
  - Operating implications

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<thead>
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<th>Relative Cost Structure</th>
<th>Overhead Management</th>
</tr>
</thead>
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<td></td>
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How do these characteristics vary and what behaviors do they drive?
Discussion of Characteristics (cont.)

- **Capacity Utilization**
  - Full throttle preferred
  - Sweet spots exist
    - Number of chlorinators
    - Manning levels
    - Buildings or trains

- **Cost Structure**
  - Very few true variable costs
  - Supply contracts rigidity
Discussion of Characteristics (cont.)

- Overhead Management
  - Number of locations
  - Leverage across other business

- Capital Structure
  - Debt financing
  - Equity financing
  - Internally funded

- Cash Management
  - Earnings driven decisions
  - Cash driven decisions
  - Stocking strategies
Discussion of Characteristics (cont.)

- Access to Market
  - LONELY: Captive
  - UNATTACHED: Hybrid, Merchant LTA, Merchant Spot

- Degree of Integration
  - NON-INTEGRATED: Sponge Production Only, Sponge plus Mag. Recovery
  - INTEGRATED: Sponge, Mag. Recovery plus TiCl, Sponge, Mag. Recovery, TiCl plus Ore
Discussion of Characteristics (cont.)

- Labor Flexibility
  - Skills
  - Rates
  - Work rules
  - Trailing costs
  - Local laws

- Government Support
  
  **Pluses**
  - Depreciation
  - Stockpiling

  **Minuses**
  - Politics / Social Concerns
  - Labor flexibility
Regional Considerations

Currency Exchange?  Freight Costs?  Political Risk?
Duties and Tariffs?  Taxes and Incentives?
Conclusions

- Around the world in 20 minutes:
  - 3 US producers
  - 2 Japanese producers
  - 3 FSU producers
  - 13 Chinese producers
- Common themes
- Unique circumstances
- More than enough pain to go around

Specific actions of 20+ producers in short, medium and long term depend upon their unique circumstances and future outlooks
Thank You!