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TIMET

**Balancing Your Raw Materials Portfolio**

Our business is not unlike the weather - difficult to predict and subject to change. Just as you wouldn't travel around the world for years with only one change of clothes and no umbrella, you shouldn't set out to navigate the titanium business for years without a varied wardrobe and some protection against the elements. Sourcing decisions are frequently made at all stages of the titanium supply chain. Whether you represent a mill, a parts supplier or an end user of titanium, it is important to craft an all weather sourcing strategy.

This presentation considers the merits of a balanced sourcing portfolio which includes a range of raw material types, melting technologies and sources to help in strategy selection for all levels of the supply chain. Pro's and Con's of utilizing Sponge versus Scrap, VAR melting versus CHM, and Captive versus Partnership arrangements will be discussed. A flexible portfolio which recognizes the merits and pitfalls of each element will help each of us adapt to the inevitable change in seasons.

In addition, sponge capacity trends in North America and Japan will also be reviewed and summarized as well as trends in the scrap and alloy markets.
World Industry Supply Trends
Balancing Your Raw Materials Portfolio

Henry S. Seiner
2008 ITA Conference
September 2008
Disclaimer

Certain of the information presented herein relates to matters that are not historical facts but are forward-looking projections/statements that involve risks and uncertainties associated with TIMET’s business that are described more fully in TIMET’s filings with the United States Securities & Exchange Commission. Actual future results could differ materially from these projections. You rely on these projections and other information in this presentation at your own risk, and TIMET assumes no duty to update any of this information should expectations change.
Presentation Outline

➢ Need for a Balanced Portfolio
  • In Life
  • In Titanium Raw Materials

➢ Sponge Emphasis
  • North America
  • Japan

➢ What is a Balanced Titanium Materials Portfolio?
  • Sponge / Scrap / Sourcing
  • Melting Profile

➢ Where do I Find One?
Balanced Portfolio - Lifestyle
Balanced Portfolio – Titanium Materials

- Should I use scrap?
- Should I use sponge?
- Should I make my own?
- Should I buy it?
- Should I do an LTA?
- Should I play the market?
- Should I use solids?
- Should I use turnings?
- Should I VAR melt?
- Should I cold hearth melt?
Sponge Capacity – North America

- **TIMET - Henderson, Nevada**
  - Completed 47% expansion in 2007
  - Expanded from 8,600 mts per year to 12,600 mts
  - Reached practical capacity in early 2008

- **Honeywell – Alta Group – Salt Lake City, Utah**
  - Sodium reduced high purity product
  - Historically for semi-conductor industry
  - Announced intent in Sept. 05 to service other markets
  - Unconfirmed report by Roskill in 2007 of plan to increase capacity from 340 mts per year to 700 mts
Sponge Capacity – North America (cont.)

➢ ATI – Albany, Oregon
  • July 2005 announced re-start of plant shuttered in 2001
  • Production re-started in 2006
  • With reduction furnace put on-line late Q108, capacity exists to produce up to 10,000 mt per year in Oregon

➢ ATI – Rowley, Utah
  • June 2006 announcement of 10,900 mt green-field plant for $325M to begin production in Q308
  • July 2008 expectation for 10,900 mt plant start-up by end of Q109 for $460M – with infrastructure to expand by additional 8,200 mts
  • Total potential of 19,000 mts in Utah alone

Source: ATI Press Releases and SEC Filings
RTI – Hamilton, Mississippi

- September 2007 announced investment of $300M green-field sponge plant capable of producing up to 9,000 mts per year
- March 2008 announced long-term tetrachloride supply agreement with Tronox Inc. to supply from contiguous plant
- Engineering design and planning complete along with order placement of long lead-time equipment
- Expecting 2010 start-up
- Recent projections expect capacity to reach 4,500 mts in 2010 and 9000 mts capacity in 2014 subject to market conditions

Source: RTI Press Releases, SEC Filings and July 2008 Farnborough Investor Relations Presentation
North American sponge capacity could grow from less than 9,000 mts to between 40,000 and 50,000 mts over 10 year period.
Sponge Capacity – Japan

➢ Osaka Titanium – Amagasaki Plant
  • Formerly Sumitomo Titanium
  • Principal shareholders with equivalent stakes (23.91% each) are Kobe Steel and Sumitomo Metals
  • Producing titanium sponge since 1954
  • Increased capacity 20% in 2002 to 18,000 mts per year
  • Increased capacity 33% in 2005/2006 to 24,000 mts
  • Increasing capacity 71% in 2008/2009 to 41,000 mts
    – 8,000 mts additional starting October 2008
    – 6,000 mts additional starting July 2009
    – 3,000 mts additional starting October 2009

Sponge Capacity – Japan (cont.)

Toho Titanium

- 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
  - Currently increasing capacity to 16,000 mts
  - Further expansion to 22,000 mts may be possible as part of long-term plan

- Wakamatsu Plant in Kita-Kyushu City
  - New plant due to come on line late 2009
  - Annual capacity of 12,000 mts
  - Further expansion to 24,000 mts possible as part of long-term plan

Sponge Capacity – Japan (cont.)

Japan sponge capacity increasing from less than 25,000 mts in 2000 to nearly 70,000 mts by 2010 with possible expansion to nearly 90,000 mts.
Considerations for a Balanced Ti Portfolio

- Sponge versus Scrap
- Captive versus Purchased
- Long-Term versus Market Purchases
- Engine versus Golf Club Quality
- North America versus Europe versus Asia
- Scrap Forms - Solids versus Turnings
- Melting Technology – VAR versus CHM
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

Source: metalprices.com and TIMET Internal Estimates
Sponge versus Scrap (cont.)

Alloy benefit to scrap incorporation varies over time

Vanadium and Moly Market Values --- 1/1/2002 = 100

- Ti 6Al-4V
- Ti 10V-2Fe-3Al
- Ti 15V-3Al-3Cr-3Sn
- Ti 6Al-2Sn-4Zr-2Mo
- Ti 6Al-2Sn-4Zr-6Mo
- Ti 5Al-5V-5Mo-3Cr

V and Mo content vary from grade to grade, comprising as much as 15% of recipe

Source: Platts Metals Week
Captive versus Purchased Sponge

Considerations involved in “Make versus Buy” decision:

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<tbody>
<tr>
<td>Capital Investment ?</td>
<td>Inventory Management ?</td>
<td>Technology ?</td>
</tr>
<tr>
<td>Control ?</td>
<td>Flexibility ?</td>
<td>Environmental ?</td>
</tr>
</tbody>
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Advantages and Disadvantages exist for each element
Relative benefits and detriments vary over time
Risks vary as well
### Long-Term versus Market Purchases

**Considerations involved in LTA vs Spot Buying Decision:**

<table>
<thead>
<tr>
<th>Quantity ?</th>
<th>Shortages ?</th>
<th>New Entrants ?</th>
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<td>Volume Confidence ?</td>
<td>Excess Supply ?</td>
<td>Tariffs ?</td>
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<tr>
<td>Pricing ?</td>
<td>Duration ?</td>
<td>Currency Exchange ?</td>
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*Careful examination of many market factors required*

*Limited certainty exists for most factors*

*Flexibility desirable*
Sponge Quality Consideration

“Fit for Purpose” critical element of decision process

Courtesy of Rolls Royce GMBH
Regional Considerations

Currency Exchange?  Freight Costs?  Political Risk?
**Scrap Forms – Solids versus Turnings**

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<thead>
<tr>
<th>Bulk Weld–Large Solids</th>
<th>Feedstock-Small Solids</th>
<th>Turnings/Chips</th>
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Value of scrap forms (Ti 6Al-4V prepared and indexed where 1/1/2005 = 100) tend to move together, but relationship changes over time.
Melting Technology – VAR versus CHM

VAR Furnace & Round Ingot

EB Furnace & Rectangular Slab
Where Do I Find a Balanced Portfolio?