Role of Russian Raw Material in Global Titanium Market

Titanium 2005
International Titanium Association
21st Annual Conference & Exhibition
September 27, 2005
Primary Components of Titanium Metal Raw Materials Demand

• Sacrificial Applications
  – Benchmark for market activity is ferrotitanium production

• Mill Product Applications
  – Benchmark for market activity is sponge production
Russia a Major Producer of Ferrotitanium

- VSMPO is the largest of about 16 Russian producers of ferrotitanium
- Due to high prices for this product in 2004, Russian exports increased 25% from 2003
- VSMPO produces its ferroti from its mill product scrap stream
- Other producers use largely obsolete military and chemical plant equipment
Growth in all Market Segments Driving Cyclic Recovery in Mill Product Shipments

Peak demand projected to reach 75,000 MT, up 50% from trough in 2003
Industry Investment in Sponge Capacity Demonstrates Commitment to Meet Demand

Announced Capacity Increases Add Approximately 25,000 MT by 2007

MT in 000’s


- China
- Ukraine
- Kazakh
- Russia
- Europe
- Japan
- United States
Industry Sponge Capacity Investment Appears Sufficient to Meet Near Term Peak Demand

- Current investment will likely take operating rate globally to mid – 80% range by 2008
- Higher scrap recycle rates will impact sponge needs eventually
- Operating rates projected to remain at historical high levels through this forecast period

Historical and Projected Global Sponge Capacity Utilization

Green is Actual, Yellow is Forecast
Long Term Outlook Needed in Evaluation Of Titanium Sponge Investment

- Scenario A: 2008 is a long term market peak, with demand returning to 50,000 MT annually on average
- Scenario B: 2008 demand becomes the long term market average at approximately 75,000 MT annually
- Scenario C: 2008 is a stepping point in the long term cyclical growth in demand for the industry
Return to Market Demand of Past 5 Years Implies Overinvestment in Sponge Capacity In this Cycle

- Market demand retreats to previous levels of 50,000 MT
- Collapse of commercial aerospace demand
- World GDP growth stunted for extended time

Sources: Airline Monitor, Industry Reports, Company Estimates
Static Cyclical Demand Indicates Little Need for Further Sponge Capacity Investment

- Mill product demand remains at 75,000 MT in 10 years

- World GDP stagnates, limiting growth in consuming markets
- Competitive materials could erode share for titanium
- Lack of demand growth for products of consuming industries

Sources: Airline Monitor, Industry Reports, Company Estimates
Continued Cyclical Growth Scenario for the Industry Indicates Further Investment in Sponge Capacity Needed

- Mill product demand reaches 100,000 MT in 10 years

- Large Commercial Aircraft production reaches 1200+ units
- Industrial and Emerging markets continue steady 1% - 3% growth

Sources: Airline Monitor, Industry Reports, Company Estimates
Investment in Sponge Capacity at VSMPO Will Allow for Further Mill Product Volume Growth

- 6,000 MT of capacity being added in this cycle, bringing overall capacity to 32,000 MT
- Further growth beyond 2007 under study
- Evaluating continued incremental investment vs large scale expansion
- Incremental investment in melting and mill product capacities to de-bottleneck downstream production also needed
- Sponge is key bottleneck
Summary

• There has been significant investment by the titanium industry, including VSMPO, to increase sponge capacity to meet customer demand
• For the near term, it appears sufficient although maybe not soon enough for our customers
• For the long term, we must study the total market needs and decide if further investment is needed