

Mesabi Iron Range Large Scale Development Projects

UPM Blandin Paper Mill – Thunderhawk Project

- The project is for expansion and the construction of a new paper line.
- The expansion would increase paper production from 447,000 tons to 761,000 tons annually
- Wood consumption would increase from 203,000 cords to 400,000 cords annually.
- The EIS is complete and the adequacy determination for the EIS was made on May 17, 2006.
- Project cost is \$650 million.
- Employment: Permanent – 50; Construction – 506 in 2006, 823 in 2007, and 15 in 2008.

Excelsior Energy

- A coal-fired Integrated Gasification Combined Cycle process will produce synthetic coal gas, which will be burned to power the electrical generation process.
- Application for preconstruction permits was filed with the Minnesota Public Utilities Commission on June 19, 2006.
- Construction will consist of 2 phases with one 600 megawatt unit in each phase.
- The preferred site is near Taconite. The alternative site is north of Hoyt Lakes.
- 7.5 million tons of coal will produce 1200 megawatts of electricity annually
- Gasification of coal will consume about 5,000 gallons of water per minute.
- Public scoping meetings were conducted on August 22 in Taconite and on August 23 in Hoyt lakes.
- Project cost is \$1.5 billion
- Employment: Permanent – 100 to 150 per unit; construction – 1000 for 42 months

Minnesota Steel Industries

- The proposal is to construct an integrated steelmaking facility near Nashwauk.
- The project will include a taconite mine, concentrator, pellet plant, direct reduced iron plant and an electric furnace steelmaking facility
- This will be the only single-site integrated steelmaking operation in North America.
- It is estimated that the plant will consume about 200 megawatt-hours of electricity, 40,000 scfm of natural gas, and 3900 gpm of water.
- Environmental review and permitting for the facility began in January 2005. Wenck is currently preparing the Environmental Impact Statement.
- Construction is expected to begin in 2007, with production slated 2011.
- Project cost is \$1.6 billion
- Employment: Permanent – 700; Construction – 2000.

United States Steel, Keewatin Taconite – Scrubber installation

- Installed a new particulate wet scrubber during 2005.
- The scrubber was brought on-line during October 2005.
- Keewatin Taconite can now burn western coal in the pellet furnace, which results in a current cost savings of about \$15.0 per long ton of pellets
- The cost savings was about \$4.50 per long ton of pellets after hurricane Katrina
- Project cost was \$50 million.

Laurentian Energy

- This is a partnership between Virginia Public Utilities and Hibbing Public Utilities
- The project includes the installation of two biomass-fired grate boilers, a wood yard near the Hibbing-Chisholm Airport, and several tree plantations developed to supply biomass
- Electricity and steam will be produced from biomass
- The utility partnership has a 20 year contract to provide 35 megawatts of electricity to Xcel energy at a rate of \$102 per megawatt-hour.
- Project cost is \$80 million
- Employment: Retain 70 full time jobs; create 65-100 new jobs

United States Steel, Minntac – Tailing Water Discharge

- Minntac has applied for a tailing basin water discharge permit for 5000 gpm.
- The Environmental Impact Statement (EIS) was determined to be adequate.
- The discharge to the St. Louis River changed the permitting process. Permits could be issued later this year.

United States Steel, Minntac – Line 3 Scrubber Installation

- Minntac is currently installing a new wet scrubber on the Line 3 pellet furnace.
- This will result in additional production capacity of about 500,000 to 1,000,000 tons of pellets annually.
- Installation of the new scrubber will allow the use of coal or biomass on Line 3.
- The use of coal or biomass will result in a current saving of about \$1.50 per long ton pellets
- Project cost is \$30 million.

United Taconite – Line 1 Furnace Reactivation

- United Taconite is the partnership of Cleveland Cliffs and the Chinese steelmaker Laiwu that purchase the assets of Evtac in a November 2004 bankruptcy auction.
- Line 1 (shutdown in 1999 under Evtac Mining) pellet furnace was reactivated during the second quarter of 2005.
- Increased pellet production from 4,500,000 long tons annually to 6,000,000 long tons annually
- Included concentrator changes that increase concentrate production capacity
- Obtain permits to burn coal in the Line 1 furnace. Coal is currently the fuel for Line 2.

Mittal Steel – New Ore Reserve

- Mittal will exhaust current ore reserves in about 5 years.
- The project is to open new ore reserves located between Biwabik and McKinley.
- A draft Environmental Impact Statement will be published on August 28, 2006. The final EIS should be published sometime in November. Short Elliott Hendrickson inc. is the EIS contractor.
- Permitting for the new mine will ensue after the EIS process is completed.
- Employment: 334 current employees retained + 30 new employees. \$6 million project.

Mesabi Nugget

- The project concluded the successful operation of the Silver Bay pilot demonstration plant
- A 500,000-metric ton per year commercial plant will be constructed at the former LTV Steel Mining site, which will be the first commercial iron nugget plant in the world.
- Permits are ready to be issued and construction of the plant should begin this summer
- Iron nuggets produced by the facility will be 96 to 98 percent iron and can be fed directly into electric arc furnaces (mini-mills) as well as integrated steelmaking furnaces
- Cost of the project is \$200 million.
- Employment: Permanent – 100 (50 at Mesaba Nugget and 50 at Northshore Mining); Construction 400.

PolyMet Mining, NorthMet project

- Excavate and process a copper-nickel deposit 6 miles south of Babbitt.
- Ore processing and tailings disposal will occur at the currently inactive Cliffs Erie taconite processing facility and the adjoining tailings basin.
- The process will utilize a hydrometallurgical process for extracting copper, nickel, palladium, platinum, cobalt and gold from the ore.
- Project plans call for mining 32,000 tons of ore per day, using open-pit mining methods.
- The NorthMet Project is designed to operate for 20 years.
- An Environmental Impact State (EIS) is currently being prepared for the project. The EIS contractor is ERM (Environmental Resource Management).
- Cost of the project is \$380 million.
- Employment: permanent – 400, construction – 1000.

Franconia Minerals, Birch Lake Project

- The project is located along the western edge of the Duluth Complex, near Babbitt.
- The project contains about 32 million tons of ore that contains copper, nickel, palladium, platinum, and gold, silver, cobalt and rhodium.
- The plan is to use mechanized underground mining techniques.
- 30-50 tons of ore is being collected for use in pilot plant tests
- Approximately \$4.7 million has been spent on the project. An additional \$10 million will be spent in the next 3 years.

Northshore Mining – Line 5 Furnace Reactivation

- Air and water permit amendments were issued to restart the idled Line 5 pellet furnace
- The Line 5 pellet furnace has not operated since the shutdown of Reserve Mining Company in 1986.
- Restarting the idled furnace will increase Northshore's annual capacity by 1,200,000 long tons to a total of 6,000,000 long tons of pellets annually.
- Increase concentration capacity to supply concentrate for Mesaba Nugget.

Other Projects not on Map:

Taconite aggregate

- The Minnesota Department of Transportation is testing the suitability of taconite waste rock as aggregate for bituminous and Portland cement concrete at the MnROAD facility located near Otsego, Minnesota (I94).
- NRRI has a \$1.7 million in funding to study taconite aggregate.
- Possibility of shipping taconite aggregate to Great Lakes Port Cities.

Cliffs Natural Stone

- Cleveland Cliffs has created a subsidiary company to market rock from the former LTV Steel Mining Company as high value landscaping materials.
- A sample of the products they are marketing can be viewed at www.cliffsnaturalstone.net.

Alternative Fuels

- Hibbing Taconite, Northshore Mining and Mittal Steel Minorca Mine are currently investigating the use of alternative fuels (bio-solids and coal) for pellet furnaces.

Mineral Revenue

Mineral revenue receipts from leasing and royalties, reached historical levels in the past two fiscal years reflecting strong iron ore demand worldwide. In FY 2005, mineral revenue receipts reached an all-time high of \$21 million. Although there was a slight decrease in FY 2006, the revenue in both years essentially doubled the revenue from FY 2004 and tripled the revenue from ten years earlier. As in the past, taconite mining generated about 97% of the revenue.

Existing Taconite Company Investment

Private Capital Investment in Minnesota's Taconite Facilities - \$millions
(Includes capital equivalent of lease purchases)

| Company | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 Plan |
|---------------------|-----------------|-----------------|-----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|
| EVTAC | \$9.40 | \$7.80 | \$7.80 | \$6.50 | \$7.10 | \$0.00 | - | - | - |
| United Tac | - | - | - | - | - | - | \$22.20 | \$31.50 | \$30.40 |
| Hibtac | \$31.30 | \$35.40 | \$30.80 | \$10.30 | \$3.00 | \$5.60 | \$22.70 | \$23.00 | \$30.00 |
| Ispat Mittal | \$1.40 | \$6.50 | \$6.20 | \$2.50 | \$5.40 | \$1.80 | \$5.00 | \$11.80 | \$9.20 |
| National | \$11.00 | \$18.00 | \$14.30 | \$4.60 | \$2.40 | - | - | - | - |
| Keewatin Tac | - | - | - | - | - | \$3.00 | \$15.00 | \$53.50 | \$28.10 |
| Minntac | \$47.20 | \$40.50 | \$58.20 | \$62.00 | \$28.00 | \$21.00 | \$32.60 | \$23.10 | \$47.90 |
| Northshore | \$13.00 | \$4.60 | \$6.20 | \$4.20 | \$3.50 | \$6.30 | \$2.50 | \$40.00 | \$15.80 |
| Total | \$113.30 | \$112.80 | \$123.50 | \$90.10 | \$49.40 | \$37.70 | \$100.00 | \$182.90 | \$161.40 |

