Bending Lake News

Stakeholders Update: The Path to Making Iron Vol.2 September 2009

Development and the Business of Iron & Steel

Iron Ore Pioneers

Bending Lake Iron Group Limited is one of Ontario's pioneer iron companies. We are developing a dynamic iron ore business in Northwestern Ontario that will utilize an iron rich resource, provide employment and benefits to both aboriginal and other communities in the area and do so in an environmentally-friendly and economically sound manner.

Permitting, environmental approvals and consultations on the project continue. The newly established Ministry of Northern Development, Mines and Forestry's *One Window Process* has streamlined the provincial permitting process and allows the federal government to keep abreast of all facets of the project as well.

Jay Mackie & the ITmk3®

The Bending Lake Iron Group (BLIG) vision to create the first Merchant Pig Iron plant in northwestern Ontario is within reach. As Bending Lake's VP and Project Manager, Jay R. Mackie feels the Project Team has the brains, brawn and wherewithal to see the completion of a commercial scale ITmk3® plant in Northwestern Ontario by Q3 2011.

Jay Mackie's 45 years in the business brings Bending Lake credibility and accolades too numerous to mention. His reputation as someone who can get things done is well established.

Under his tenure the Northshore Mining Operation proved the commercial viability of the ITmk3® process leading to the construction of the Hoyt Lakes, MN commercial-scale plant.

Commercial viability of that process began in November of 2001 with the signing of a memorandum of understanding (MOU) between Kobe Steel, Ltd. and Mesabi Nugget, LLC to construct and operate the 50,000 tons per year demonstration plant at the Northshore Mining Company at Silver Bay, Minnesota. (Northshore Mining is a wholly owned subsidiary of Cleveland-Cliffs Inc.)

Cleveland Cliffs provided the facility, raw materials (magnetite concentrate) input and manpower. Other partners at the time were the Minnesota consulting company Ferrometrics Inc., Steel Dynamics (over time the latter would assume the leadership and direction on the Hoyt Lakes ITmk3® plant), Kobe Steel, Minnesota Department of Trade and Economic Development and the Iron Range Resources and Rehabilitation Board.

By 2004, the Mesabi Nugget Demonstration Plant significantly changed the face of the iron industry.

The demonstration plant design proved the technology could commercially manufacture iron nuggets for steel production in a far more environmentally friendly and profitable manner. The process has the ability to create hundreds of new sustainable jobs, high quality.

Jay Mackie is leading the Bending Lake Iron Group Project Team to mirror the new SDI facility at the Steep Rock mine site located near Atikokan, Ontario.

Q. Why use Pig Iron? A. In the steel making process, metals like nickel and copper have a poorer affinity for oxygen than iron and cannot be removed through oxidation. Scrap chemistry is therefore controlled by introducing pig iron.

Steelmaking Trends

To-day's steel industry is comprised of electric arc furnace (EAF) and integrated steel producers. There are significant differences between these steelmaking processes.

EAF steelmakers, often referred to as mini-mills, produce steel by melting scrap and enriching it with pure iron to improve the quality.

The integrated steel mills produce steel from iron ore utilizing the blast furnace and basic oxygen furnace processes.

The rapid growth in electric-arc furnace steel-making is due to a number of factors including relatively low investment requirements, improved technology with reduced production costs, and the generally lower price of steel scrap in comparison with blast furnace hot metal. (Capital investment per annual ton of hot-rolled sheets (1996 dollars) is approximately $750 for coke oven/blast furnace, basic oxygen furnace production vs.$213 for electric furnaces.

Between 1960 and 1980 there was a 300% gain in the electric arc furnaces market share over blast furnaces. In 1984, about 34% of the total 92 million tons of raw steel produced in the U.S. was made with electric arc furnaces. The percentage of steel produced by EAFs is 55^{+}% significant and growing. Today, approximately 222 electric arc furnaces operate in the United States, ranging in capacity from less than 10 to over 400 tons, employing more than 150,000 people.

These steel "mini-mills" produce more than half of all new U.S. steel, primarily by recycling scrap steel alone with pig iron.

The majority are geographically concentrated in the Great Lakes Basin. Principal consumers of the steel generated from these mills are vehicle and appliance manufacturers and the construction industry.

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Merchant Pig Iron

Our MPI market analysis has convinced us that the demand for MPI in North America, especially for a domestically produced product, is large. All MPI currently used in North America is imported, approximately 7 million tons annually, with the majority originating in Brazil or former states of the Soviet Union.

MPI produced using the ITmk3® process is nearly pure iron - 97-98% Fe versus 93% for imported MPI and 64-66% for iron ore pellets.

Therefore, when it comes to customer's transportation issues focusing on costs incurred for transporting excessive waste and moisture, our MPI will be totally consumed in either gray iron castings or manufacturing steel.

Our project plans to produce up to 1.2 million tons of MPI annually and market it to all facets of the steel and gray iron foundry industries located in the industrial heartland of North America - the Great Lakes Basin.

The ITmk3® Process in a Nutshell

The heart of the Steep Rock Iron Processing Facility's strength is ITmk3® , (pronounced "I-T Mark Three") a proprietary technology developed by Tokyo-based Kobe Steel (www.kobelco.co.jp/index_e_wi.htm). The Bending Lake project, like the Mesabi Nugget Project, will be more than eight times as large as the demonstration project.

ITmk3® , which uses rotary-hearth furnaces heated to 2,372 to 2,642 degrees, significantly alters the production equation. The process rapidly converts magnetite concentrate (containing about 65-68 percent iron) directly into iron nuggets that are 97 percent iron - quality equal to blast-furnace pig iron.

The process provides an attractive, lower-cost alternative for processing iron ore into a value-added product.

First Commercial Scale ITmk3®

The Mesabi Nugget (ITmk3®) plant at Hoyt Lakes, MN began its' start-up operations in July of 2009, breathing renewed life to the Minnesota Iron Range. Last month, 700 contractors were at the construction site in Hoyt Lakes to initiate commissioning the 500,000 ton per year iron nugget facility.

Recently ABC news reporters were on hand with the team and learned what commissioning means. It's when parts of the plant are being turned on for the first time, and tested, to make sure they will work when the plant is up and running. (ABC news clip link: http://www.wdio.com/article/stories/S1044804.shtml?cat=10335

The start-up began in the raw materials building and will continue through the rest of the massive plant during the summer months, said Lauren Evenson, Operations Manager.

After more than two years construction, Dave Bednarz, VP of SDI reported, "We're proud of to be part of the Iron Range. We're the economic stimulus package right now."

The cutting edge of technology is expected to begin nugget production in November.

Mesabi Nugget is owned by Steel Dynamics, a company based in Indiana and Kobe Steel. Nuggets from the Iron Range will feed SDI's steel mills.

Making Pig Iron Fly

The decision to follow the ITmk3® process, was made based on higher product value, environmental friendliness and lower transportation costs. In addition to lowering costs, the rotary-hearth process yields a far higher-value product.

Our business strategy is that by 2011 the Steep Rock Plant will be producing iron nuggets using ITmk3® technology for sale on the open market for 400^{+} a ton FOB (freight-on-board) Atikokan. This is about five times more than iron ore pellets would sell at today's price of $75-$80 per ton.

The ITmk3® -produced iron nuggets have 97-98% iron with oxygen and silicates already removed. Lower emissions are also part of the pilot plant's promise. Rotary hearths generate carbon-dioxide emissions 20 percent lower than blast furnaces, according to Midrex Technologies Inc., the Kobe Steel subsidiary that developed the ITmk3® process in conjunction with its corporate parent. (Source: www.midrex.com)

Financing The Mesabi Project

The Mesabi Nugget Project's ample potential was spurred by considerable state support. The $260 million nugget project is a joint venture between Steel Dynamics of Indiana and Kobe Steel of Japan to produce 500,000 tons of iron nuggets per year and directly employ 50 people at the former LTV Steel Mining Company site on Minnesota's Iron Range.

The state's Iron Range Resources and Rehabilitation Agency (IRRRA) pledged $16.5 million in loans and another $10 million from the Minnesota Minerals 21st Century Fund (administered by the Minnesota Department of Employment and Economic Development).

This public-private investment means jobs for the Iron Range and the potential of expanded markets for Minnesota iron ore," Governor Pawlenty said. "We are creating jobs and capturing other economic benefits by converting our natural resources into a value-added product, which an expanding world steel market demands and a modern, industrialized society needs."

Steel Dynamics originally intended to invest $85 million in equity in the venture and to hold an 81% equity interest, while Kobe Steel planed to invest $20 million in equity for a minority equity stake of 19%. At the time Mesabi Nugget had entered into a deal to buy more than 4,000 acres at the former LTV site.

The ITmk3® ® technology will allow Minnesota iron ore to be used by both the electric arc furnace, integrated steelmakers and gray iron foundries.

Upcoming Meetings - Fall 2009

1. 22-23Sep09 - Government Stakeholders, Thunder Bay & Bending Lake, ON
2. 24Sep09 - Speaking Engagement Canadian Institute, Toronto, ON
3. Oct09, Strategic Partnership Planning Session w/ Fort William First Nation on Training and Job Creation
4. 01Nov09 - Speaking Engagement CAMA Conference, Toronto, ON

Invest in Hard Assets

Opportunities are best when times are tough. This is evidenced by the recent Toronto Stock Exchange run on commodities. We hope to see another iron ore rally like the one last summer when the price of MPI reached a high of $1200 per ton landed in New Orleans, LA.

In an interview conducted by the *Gold Report* recently, Carmel Daniele, founder, CEO and CIO of CD Capital recently affirmed "the commodities super-cycle is still with us and will be stronger than ever. The financial crisis may have dampened demand, but it has actually destroyed supply because a lot of mines have shutdown and cut off supply. And you will see when demand picks up-and it doesn't take very much for demand to pick up-there will be no supply because you can't just flick a switch on and off to turn on supply. It will take a lot of time to crank up the mines and get them supplying again to meet that demand for raw materials". (http://www.mineweb.com/mineweb/view/mineweb/en/page67?oid=87737&sn=Detail)

"Through the hard work, collaboration and support of many people, we will be able to develop a more energy-efficient, environmentally friendly way to make iron," said U.S. Rep. James Oberstar (DFL), part of the Minnesota congressional delegation that's backed the Mesabi Nugget project. (Source www.midrex.com)

Jobs, jobs, jobs!

With development comes jobs. The Bending Lake Steep Rock Iron Processing Facility is estimating about 700 construction jobs to be created over the next few years.

In the next few months, as our permitting progresses, we hope to see more geology, engineering, environmental and support staff out on the land overseeing the various phases of development.

We will be announcing available and upcoming jobs as they come on-line and the ITmk3® permitting is put in place.

Prospecting Program Update

On August 17, 2009 Bending Lake Iron Group began delivering the Confederation College sponsored Mineral Prospecting Program. The first class is composed of nine students from Fort William First Nation, Kasibonika First Nation, Kitchenuhmaykoosib Inninuwug, Ginoogaming First Nation, the Searchmont Metis and beyond.

A Sudanese-Canadian student looking for opportunities in the mining field started the program but was not able to secure funding to continue. He hopes to enrol in the next Mineral Prospecting course. To date the students have taken First Aid, Workplace Safety, and the first phase of their Chainsaw Safety and Boat licensing training.

We expect to have the students start their hands-on segment by September 8, 2009.

The course is being delivered in response to skills shortages in the mineral exploration industry. The acquired skills will provide a professional approach coupled with entrepreneurial training tools to help sustain those entering the industry.

Anyone interested in attending the next session is invited to contact Riley Burton at (807) 475-6274 Confederation College, Bending Lake Iron and/or your local Service Canada Representative.