Iron Ore – 2012 Annual Review

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CANADIAN PRODUCTION

There were six iron ore producers in Canada in 2012: The Iron Ore Company of Canada (IOC), ArcelorMittal, Cliffs Natural Resources, Labrador Iron Mines, New Millenium/Tata Steel, and Huldra Silver Inc.

In Table 1, preliminary data indicate that Canadian shipments of iron ore increased 10.4% from 35.7 million tonnes (Mt) in 2011 to 39.4 Mt in 2012. Production from Quebec accounted for 52.1% (20.7 Mt) of the Canadian total and production from Newfoundland and Labrador accounted for 47.3% (18.6 Mt).

Canadian iron ore shipments for 2012 were valued at over $5.3 billion, a 3.4% decrease from the 2011 value of $5.5 billion. As Table 2 shows, Canada maintained its global rank as the ninth largest iron ore producer in the world (unchanged from 2011).

Canadian iron ore shipments and exports (Figure 1) declined slowly between 1997 and 2001 and then regained momentum until 2003. Exports declined in 2004 and have generally increased since then. Shipments are more volatile; they rebounded from 2004 to 2006, declined from 2006 to 2009, and have rebounded more strongly since 2009.

CANADIAN DEVELOPMENTS

Many factors influence iron ore project economics, including the location, size, and quality of the deposit; initial and sustaining capital costs; product quality; operating costs; and transportation. Since 1954, over 2 billion tonnes (t) of iron ore have been extracted from Canada's Labrador Trough. Canada can supply much more high-quality tonnage, but interested companies and investors face changing demand patterns for global steel production and trade in iron ore. Another cause for concern is the development of new projects located in remote areas where the challenges (e.g., proper infrastructure, environmental assessment, etc.) require calculated risk to meet the demand and supply for major steel markets in Asia.

At present, six railways connect existing iron ore mines in the Labrador Trough to the ports of Sept-Îles, Pointe-Noire, and Port Cartier. The Cartier Railway is privately owned by ArcelorMittal and delivers to Port Cartier. Other lines connect to IOC's Quebec North Shore and Labrador Railway (QNS&L), which serves the ports at Pointe-Noire and Sept-Îles. In the medium term, additional rail capacity will be needed to service new and expanded mines in the vicinity of Fermont, Wabush/Labrador City, and Schefferville. The estimated cost of a new rail infrastructure in the Labrador Trough could reach or exceed $5 billion (Source: Genivar's October 2011 Feasibility Study for the Canadian National Railway).

Port capacity is also a significant constraint. The Port Authority of Sept-Îles plans to invest $220 million to expand capacity, of which $110 million would be funded by new users that must also finance mine development.

Total investment for mine development and transportation infrastructure over the next five years could exceed $20 billion and lead to the development of up to seven new iron ore mines, but will be very dependent on demand and prices in Asian markets and the ability of prospective producers to deliver quality products at competitive costs.

Four companies with iron ore mining projects that are close to a development decision include Alderon Iron Ore Corp., Century Iron Mines Corp./WISCO, Champion Iron Mines Ltd., and Baffinland Iron Mines Corp. Others that may be classified as "advanced explorers," which have large deposits, but require significant investment to advance their projects to the feasibility stage, include: Adriana Resources/WISCO, Oceanic Iron Ore Corp., and Bending Lake Iron Group.

Future exploration and development within the Labrador Trough will also depend, to some degree, on the outcome of planned divestiture of operating assets and projects. Some existing producers and incoming mining projects, faced with existing global market pressure, made necessary adjustments to either maintain viability and/or ensure continuity of project development. Some examples of this are as follows:

- In early 2012, Rio Tinto PLC hired Crédit Suisse and CIBC World Markets to find a potential buyer for all or part of its 58.7% stake in IOC.

- Also in early 2012, ArcelorMittal sold a portion of its stake in Baffinland Iron Mines Corp.'s Mary River project to Nunavut Iron Ore Incorporated. The deal provides for an equal 50:50 split between the two companies.

- Baffinland Iron Mines Corp. (a joint venture between global steel giant ArcelorMittal and Iron Ore Holdings LP, its private equity-backed partner) informed the Nunavut Impact Review Board in early 2013 of a scaled-down plan for its Mary River project from the $4 billion development cost to an estimated $740 million, reducing its planned iron ore production of 18 million tonnes per year (Mt/y) to just 3.5 Mt/y.

- In early 2013, Cliffs Natural Resources Inc. announced that it would idle its Wabush Pointe-Noire pellet plant by the end of the second quarter of 2013. Cliffs also announced it would delay its 7.4-Mt/y, Phase 2, Bloom Lake expansion to early 2014 from its planned mid-2013 start-up.

- Also in early 2013, Tata Steel Minerals Canada Limited entered into a framework arrangement with Labrador Iron Mines Holdings Limited to establish a strategic

relationship under which the two companies have agreed to cooperate with each other in various aspects of their respective iron ore operations in the Labrador Trough.

- In March 2013, Alderon Iron Ore Corp., in developing its Kamistiatusset (Kami) property in Labrador, sold 25% of its assets to Hebei Iron & Steel Group (HEGANG), China's largest steelmaker by capacity.

WORLD PRODUCTION

In its *2012-2014 Iron Ore Market Report*, the United Nations Conference on Trade and Development (UNCTAD) reported that, with the world economy and industrial production slowing in 2012, world crude steel production increased from 1,527 Mt in 2011 to 1,542 Mt in 2012, a growth of 1%. China again accounted for most of the increase; its production rose by 3.1% from 695 Mt to 717 Mt.

UNCTAD also reported that the world iron ore market stopped growing in 2012 and production declined marginally (1.8%) to 1,863 Mt, the first decline since 2001. Meanwhile, world pellet production stabilized, rising by 0.8% from 421 Mt in 2011 to a new record of 424 Mt in 2012.

The three largest companies (Vale, Rio Tinto, and BHP Billiton) together controlled 35.2% of world production in 2012. Brazil-based Vale remained the world's largest iron ore producer (16%) at 320 Mt in 2012, a slight decrease from an all-time high of 323 Mt in 2011. Rio Tinto remained second with 197.3 Mt produced (9.9%) followed closely by BHP Billiton with 186.9 Mt (9.3%).

Production decreased in Asia and the Americas, remained relatively stable in Europe, and increased in Oceania and Africa. Among the major producers, Australian production increased 8.9% while Chinese and Brazilian production decreased by 12.7% and 7.6%, respectively. Production from India decreased to an estimated 8.7% while production in the Commonwealth of Independent State (C.I.S.) countries increased by 1.9% (Source: UNCTAD).

WORLD DEVELOPMENTS

Large capital requirements to develop new infrastructure make it challenging for major iron ore projects to advance. This is the case in West Africa and also for new entrants to access infrastructure owned by BHP Billiton, Rio Tinto, and Australia's Fortescue Metals Group.

UNCTAD reported that global iron ore mining capacity taken into operation since May 2012, as identified at the individual project level, reached 125 Mt. As of May 2013, the total project pipeline contained 771 Mt of new production capacity to come on stream between 2013 and 2015. Of this total, around 360 Mt are categorized as "Certain," 231 Mt as "Probable," and 306 Mt as "Possible."

Geographically, 32% of these projects are found in Oceania (Australia), 29% in Latin America, 13% in Africa, 11% in Europe, 11% in Asia, and 4% in North America. In spite of the uncertainties, it may be assumed that between 390 Mt and 580 Mt of new capacity will come on stream in the period up to and including 2015 (Source: UNCTAD).

MARKETS AND PRICES

China and Western Europe are not self-sufficient in iron ore. They rely heavily on Australian and Brazilian product and, to a certain extent, on Canadian sources.

The European steel industry is a major consumer of product from Canadian iron ore mines. In 2012, European and Asian countries dominated Canada's exports or iron ore pellets and concentrates. The United States, as the second most important market, consumed mainly pellets. Iron ore trade in the Canada-U.S. market is predominantly in pellets.

Following a brief period of volatility in 2012, the iron ore market recovered from the lows of September when the price fell below US$90/t for 62% Fe CFR (cost and freight) China. Prices in the first quarter of the year reached US$135/t and ended the fourth quarter of 2012 at just under US$100/t.

KPMG estimates prices will average US$124/t in 2013, US$115/t in 2014, and US$105/t in 2016. For steel, KPMG's view is that the continuing urbanization of the world's population will double steel demand by 2050.

TRADE

In 2012, international iron ore trade reached record levels as exports increased for the eleventh year in a row to 1,131.7 Mt, up 0.8% compared to 2011. Seaborne iron ore trade increased by 4.8% to 1,110 Mt (source: UNCTAD).

Brazil remained the export leader with pellet exports of 51.2 Mt in 2012, down 10% from 2011. Canada and Sweden, the second and third largest exporters with 18.1 Mt and 16.6 Mt, respectively, remained far behind Brazil.

In Table 1, preliminary data for 2012 show that Canada exported 34.5 Mt of iron ore (valued at $4,135.0 million), of which 52.4% was pellets (valued at $2,399.8 million) and 47.6% was concentrates (valued at $1,735.2 million), for a 1.6% increase (0.5 Mt) in total exports over the 2011 level of 34.0 Mt. Although concentrate exports decreased by over 0.1 Mt (0.7%) from 16.6 Mt in 2011, pellet exports increased 3.8% (by 0.7 Mt) from 21.4 Mt in 2011.

In 2012, Canada's major export market countries for pellets (Table 1) were China (28.7%), the United States (19.3%), the Netherlands (12.7%), Trinidad and Tobago (9.8%), France (9.0%), and Germany (3.6%). For concentrates (Table 1), the principal export market countries were China (60.6%), France (11.6%), Japan (6.0%), the Netherlands (5.8%), and Germany (4.2%).

Preliminary data in Table 1 also show that Canada imported 6,499.9 Mt of iron ore in 2012 valued at $900.2 million, a decrease of over 0.6 Mt (8.8%) from 2011. The bulk of the imported pellets (99.6%) came from the United States while concentrates came primarily from Mexico (64.2%). Imports decreased (pellets by 8.8% and concentrates by 8.3%) compared to 2011. Canadian imports (some pellets, but mainly concentrates) from the United States have been declining in recent years.

OUTLOOK

China, the largest steel producer in the world, is expected to continue to be the most important factor guiding global iron ore market prices.

Although China's steel production rose slightly, driven by the construction of railways, roads, and bridges, 2012 was a difficult year for steel mills with falling production in Europe and declining growth rates in other regions. Overcapacity has been, and will continue to be, a persistent problem that will see steel prices track costs for raw material (i.e., iron ore, coking coal, and steel scrap). Further destocking and restocking cycles, and China's import parity, will drive prices.

China currently imports about two-thirds of the world's iron ore and has excess steel capacity. With no other country able to absorb the slack, iron ore prices risk years of decline as a major oversupply swamps demand. By the end of 2013, the three major miners (BHP Billiton, Rio Tinto, and Vale), together with Australia's Fortescue Metals Group, could produce over 1 billion t of iron ore (i.e., some 200 Mt more than China would buy if imports grew at the same rate as in 2012). The Australian Bureau of Resources and Energy Economics (BREE) expects Australia will contribute more than 50% (678 Mt) of global exports by 2015 from 13 brownfield and 35 greenfield projects. By 2015, these large mining companies plan to spend over US$244 billion on expansions.

UNCTAD estimated that the world iron ore market would be characterized by some strength for several years to come, although prices would decline as new production comes on stream. Its report also stated the World Steel Association's view that global steel demand would grow at modest rates from a historical perspective and should recover slowly in 2014. The Association's short-term forecast for world steel use, presented in April 2013, is that it will rise by 2.9% in 2013 followed by a 3.2% increase in 2014.

On the basis of an unchanged relationship between iron ore demand and crude steel production, UNCTAD estimates that global iron ore use will increase from 1,863 Mt in 2012 to about 1,930 Mt in 2013 and 2,010 Mt in 2014.

The outlook for Canada as a global supplier of iron ore is bright, notwithstanding infrastructure issues, the length of the environmental review process, and successful agreements with local Aboriginal groups. Companies with capital-intensive projects will find it more difficult to raise funds to bring projects online. Strategic partners will be needed to bring some of the larger projects online. A number of companies have already formed strategic alliances with major Asian steel mills to co-develop and finance projects to production.

The confidence of these strategic partners rests on the ability of companies to deliver raw material to clients. The sole gateway from the Labrador Trough to China and traditional European markets is the port of Sept-Îles and it is also the only means of delivering to them from the mines themselves (by railway and proposed ferroduct). The port is already investing in a new 450-metre-long dock (i.e., multi-user wharf) that, when completed, will accommodate up to 50 Mt/y of material carried by the largest bulk carriers in the world (Chinamax ships with a capacity of 350,000 t and up). Completion is set for April 2014. Another 50 Mt of capacity could be added later.

For the 2013-17 period, the problems facing iron ore miners globally have already caused projects that were expected to add around 260 Mt of iron ore to be delayed or postponed. Future demand for iron ore will most likely be met by established iron ore producers' large-scale and low-cost projects. In the coming years, iron ore production will be increasingly characterized by cost-competitiveness as lower prices force high-cost operations out of the market.

Notes: (1) For definitions and valuation of mineral production, shipments, and trade, please refer to the document entitled "Definitions and Valuation: Mineral Production, Shipments, and Trade." (2) Information in this review was current as of June 30, 2013. (3) This and other reviews, including previous editions, are available on the Internet at www.nrcan.gc.ca/mining-materials/markets/commodity-reviews/8360.

Iron Ore - Other Information

INTRODUCTION

Iron ore comprises rocks and minerals commonly found in the earth's crust where they occur in combination with other elements from which metallic iron (Fe), which contains iron oxide and carbonates, can be economically extracted when heated in the presence of a reducing agent such as coke. The ore is usually rich in iron oxides (certain types of hematite ore contain up to 66% Fe) and vary in colour from dark grey, bright yellow, and deep purple to rusty red. The iron itself is usually found in the form of magnetite (Fe_3O_4, 72.4% Fe), hematite (Fe_2O_3, 69.9% Fe), goethite (FeO(OH)), limonite (FeO(OH).n(H_2O)), or siderite ($FeCO_3$, 48.29% Fe). Its most important mineral forms are magnetite, hematite, and siderite. The term "iron ore" is used when the rock is sufficiently rich in iron minerals to be mined economically.

Canada's Labrador Trough contains world-class iron deposits that have been mined since 1954. This band extends for about 1,100 kilometres (km) southeast of Ungava Bay through both Quebec and Labrador. Further south, it turns southwest past the Wabush and Mount Wright areas to within 300 km of the St. Lawrence River. The degree of metamorphism is variable, ranging from intense in the northern and southern portions to greenschist facies in the central portion. Several deposits of highly metamorphosed magnetite-specularite iron formation (medium- to fine-grained) are located west of Ungava Bay. North of Schefferville, several billion tonnes of taconite are outlined in fine-grained, cherty magnetite-iron formation. In the area from Wabush Lake to Mount Wright, a medium- to coarse-grained friable specularite-quartz iron forms several large deposits.

In Brazil, some ore that contains practically no other minerals can grade as high as 68% Fe. The crude ore that is mined in Canada typically grades between 30% and 44% Fe. In general, ore containing a higher percentage of iron is more valuable. If ore has more than 54% Fe, it is classified as high-grade and requires no further beneficiation other than sizing. Ore grading less than 54% Fe is considered low-grade and requires upgrading to become a marketable product. High-grade iron ore is marketed in two sizes. The first, which is ore greater than 8 millimetres (mm) in size, is called "lump ore." Ore that is less than 8 mm in size is called "fine ore."

All Canadian open-pit iron ore operations are truck and shovel type. Therefore, Canadian mines crush and grind the ore and then use gravitational and magnetic concentration methods to produce concentrates with an iron content of about 65%. To improve the iron grade in their operations, Canadian producers use a variety of beneficiation processes (e.g., the use of spirals, high- and low-intensity magnetic separators, and high-tension separators) to upgrade the iron content by extracting the silica content and other impurities from the ore. Depending on grain size, the

concentrate is then shipped as is or is agglomerated into balls of about one centimetre in diameter and fired to produce hard iron ore pellets. Steel companies use the pellets and charge them in blast furnaces where the minerals are reduced to metallic iron. Unpelletized concentrates are sintered before being charged by the blast furnace.

In standard iron ore pelletizing, the iron ore is ground and then mixed with small amounts of bentonite. Bentonite binds the grains, allowing further processing (agglomeration) into balls or pellets by the tumbling and induration effect using straight grate processes. These are then sintered in rotary kilns to obtain a hard outer surface. About 25% of the world's iron ore output is pelletized. The other basic forms of iron ore used in metal production include lump ore prepared by crushing and screening, and sinter produced from natural or screened fines. Bentonite absorbs the water, functions as a binder, and enhances the strength of the pellets. On the downside, bentonite adds unwanted silica to the blast furnace, which increases the demand for flux and coke.

World resources are estimated to exceed 800 billion tonnes (t) of crude iron ore containing more than 230 billion t of iron. The leading producing countries in order are China, Australia, and Brazil. Worldwide, 50 countries produce iron ore, but 96% of this ore is produced by only 15 of those countries. Within this marketplace, the power is concentrated in only a few hands, most notably the industry's "big three" producers.

HISTORY OF IRON ORE MINING IN CANADA

The smelting and casting of iron was Canada's first industry (source: *Geology of Iron Deposits in Canada* [Volume 1], by G.A. Gross). Before European settlements were established, there was evidence of Inuit exploitation of iron meteorites for metal. In the 13th century at the Viking settlement at l'Anse aux Meadows on the far northern tip of Newfoundland and Labrador Island, local bog iron was roasted and wrought to make nails for ships.

Champlain reported iron in Acadia in 1604 and other deposits were known as early as 1667. Throughout the following century, other deposits were discovered and exploited in Nova Scotia, Newfoundland, British Columbia, Ontario, and Quebec. In about 1670, deposits of bog iron were found near Trois-Rivières, Quebec, and by the 1740s, les Forges du Saint-Maurice was producing top-quality cast iron stoves, pots, kettles, bullets, and cannons.

With the development of Canadian sources of ore, Canadian processing plants were constructed. The development of major iron ore areas gave Canada an important position in the world's iron trade. The discovery and development of large iron ore reserves at Steep Rock Lake, Ontario, was one of the vital steps in Canada's rise to importance in international iron ore trade.

The development of the iron range in Labrador and New Quebec was the most significant step in the establishment of the iron mining industry in Canada, with the area becoming one of the world's most important sources of iron for many years. By 1950, sufficient hematite-goethite ore of direct-shipping quality had been proven to warrant the development of the Quebec and Lac Labrador Knob in the Schefferville area. The accompanying construction of 600 km of railway north from the seaport of Sept-Îles, the establishment of docking facilities there, and the establishment of hydro power facilities to serve the industry enabled the first ore shipment in 1954.

By 1959, the production of iron ore in Canada had risen from less than 3.5 million tonnes (Mt) to nearly 22 Mt within 10 years, positioning Canada at the time as the fourth largest producer in the

world behind Russia, the United States, and France, but ahead of China, Sweden, West Germany, Venezuela, and the United Kingdom by about 1.5-7.0 Mt.

For an example of the historic involvement of The Iron Ore Company of Canada, visit its web site at www.ironore.ca/main.php?sid=m&mid=110&lng=1.

Imports of iron ore products in the Canada-U.S. market are usually split 70% for agglomerates (i.e., pellets) and 30% for non-agglomerates (i.e., concentrates). U.S., Canadian, and Venezuelan producers are the main competitors in the pellets market while Brazilian, Canadian, Venezuelan, and Australian producers battle for the concentrates market.

Large quantities of iron ore are carried on the Great Lakes and on the St. Lawrence Seaway for shipment to both domestic and foreign markets. Canada's Labrador Trough iron ore producers ship out of three ports located on Quebec's north shore: Port-Cartier, Pointe-Noire, and Sept-Îles.

North American integrated steel producers primarily use pellets in their operations to produce pig iron. Integrated steel producers in Europe and the Far East have generally used sinter (made from iron ore concentrates) combined with lesser amounts of coarse ore pellets.

Prices for fines are usually established first and are used as a benchmark for pellets and lump ore negotiations. Fines and lump or pellet premiums are often established together as part of an overall package. Most iron ore prices were fixed annually under long-term sales contracts, although the spot market has become more important with the economic downturn. After some 40 years (source: *Metal Bulletin*, April 2010) of annual benchmark price negotiations between the main miners and steelmakers, a new quarterly pricing system has suddenly emerged from the three largest iron ore exporters, and customers have little choice but to go along with it.

There is a spot market for iron ore that tends to cover single-cargo sales not covered by longer-term contracts. It is used particularly when there has been an upturn in steel demand and integrated steelworks quickly expand output. It is generally lump and fine material, which can be used to increase blast furnace output in the short term, that is traded on the spot market. The price system for pellet feed has no worldwide unified standard. The negotiated Eastern Canadian, seaborne, and international prices for blast furnace pellets are usually settled annually between producers and their customers. In general, concentrate prices are about one half that of pellet prices.

When considering the future of iron ore pricing, it is important to understand that most of the iron ore is sold under long-term contracts and that buying iron ore is not like buying other metals. One of the most important considerations for steel mills is the consistency of quality of the iron ore. The operator of a blast furnace wants to be able to trust that the iron ore to be delivered will be of the same quality as the last batch.

USES

Iron ore is the raw material used to make pig iron, which is one of the main raw materials in making steel. Roughly 98% of all iron ore shipped worldwide is used in the production of iron or steel, which is one of the most useful metals in the world. Iron ore products can be differentiated by grade, content of by-products such as silica, and metallurgical amenability. The three basic types of iron ore product are sinter feed, lump, and pellets. Sinter feed, or fines, is typically a by-product of lump iron ore processing and is fed into blast furnaces after the sintering process.

Steel production is the driving force for almost all iron ore demand. However, technological changes in iron ore mining through to the production of finished steel have been major contributors in determining the quantities and properties of the iron ore demanded. There are two technologies used to produce steel: basic oxygen furnaces (BOF), which are charged with molten blast furnace iron and ferrous scrap at the integrated steel mills; and electric arc furnaces (EAF), which are charged with scrap and/or direct reduced iron (DRI) at the mini-mill plants.

Steel is created by smelting iron ore in a blast furnace to separate the iron from the other mineral impurities naturally present, known as slag. The resulting liquid iron settles to the bottom of the furnace and cools in a bed of sand, resulting in an intermediate material known as pig iron. Notably, to create one tonne of pig iron, steel producers start with approximately two tonnes of iron ore. In its final form as steel, iron is used 20 times more than all other metals combined. From bridges, skyscrapers, and railways to ships, cars, electrical power lines, telephone networks, and even paperclips, iron is the mainstay of our fast-developing modern world and is transformed into the essential ingredients of people's everyday lives. Steel is strong, durable, and extremely versatile. The many different kinds of steel consist almost entirely of iron with the addition of small amounts of carbon (usually less than 1%) and other metals to form different alloys (e.g., stainless steel).

HEALTH AND THE ENVIRONMENT

When looking at mining operations and potential greenfield projects, the effects of operating plants and environmental considerations need to be evaluated with respect to the cost and benefits of translating mineral wealth into national wealth.

Iron ore pellets are manufactured by regrinding the concentrate, blending with additives, rolling into balls, and hardening at high temperatures in induration furnaces. The chemical composition of iron ore consists of oxygen and iron bonded together into molecules. The conversion to metallic iron involves smelting through a direct reduction process to remove the oxygen. Oxygen-iron bonds are strong. To dissociate the iron from the oxygen, a stronger elemental bond must be presented to attract the oxygen. At high temperatures, carbon bonds more strongly to iron than oxygen, and coal is therefore used as the preferred ingredient. Thus, the iron ore must be powdered and mixed with coke to be burnt in the smelting process. As carbon dioxide is generated in the simple combination process of chemically stripping oxygen from iron, the smelting of iron and carbon must be conducted in an oxygen-deficient environment to promote the burning of carbon to produce carbon monoxide (and not carbon dioxide).

With respect to greenfield projects, securing international mineral investment is an added challenge in translating mineral wealth into national wealth. One example is the Mary River project on Baffin Island in Nunavut. The deposit’s richness (US$23.0 billion of iron ore) and purity (65-70% Fe) made it a gem to be possessed. Although the Mary River project will require more than 2000 workers to build 24 bridges, stretches of road, warehouses, fuel depots, landfills, and an airstrip, as well as the docks at Milne Inlet and in the Steensby Inuit communities, an Environmental Impact Statement was prepared and presented. It states all aspects of the project through construction, operation, and closure, similar to other projects where a government(s) environmental assessment process is required. This project is quite a challenge since the area is inhabited by unique wildlife; is home to terrestrial mammals, including caribou, Arctic fox, and hare; and has an abundance of marine mammals in the region, including polar bears, narwhals, beluga whales, and blowhead whales. Migratory birds in the area include snow geese, rough-legged hawks, and gyro-falcons.

Concerns about this project include limiting or preventing potential contamination from sewage, wastewater, and explosive equipment-washing, as well as a loss of fish habitat. One of the biggest impacts could come from the frequency of shipping the ore to seaborne markets.

In the end, after the non-governmental organizations, governments, and individuals review the plans, it will be up to the local Inuit to decide whether the project goes ahead and gives them an opportunity to obtain some new economic wealth.

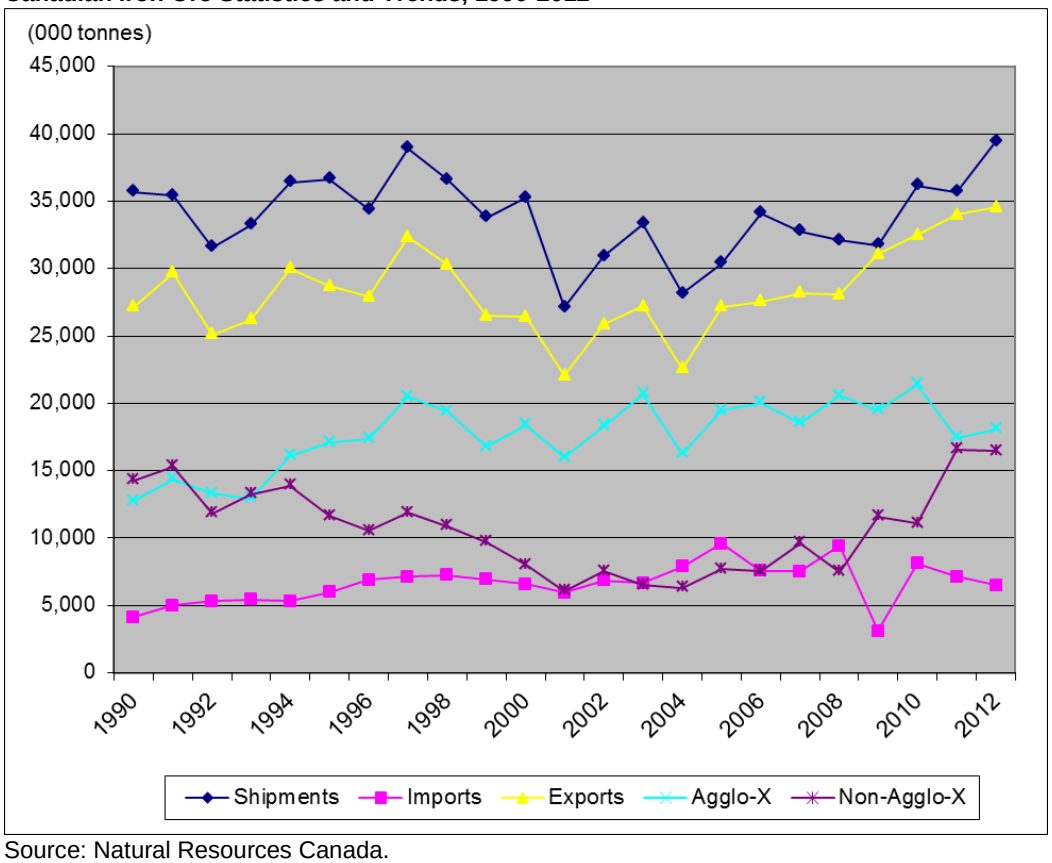
OTHER SOURCES OF INFORMATION

U.S. Geological Survey
(USGS) iron ore yearly articles http://minerals.usgs.gov/minerals/pubs/commodity/iron_ore/

World Steel Association www.worldsteel.org

Canadian Steel Producers Association www.canadiansteel.ca

Figure 1
Canadian Iron Ore Statistics and Trends, 1990-2012



Source: Natural Resources Canada.
(p) Preliminary.
Agglo-X: Agglomerated exports; Non-Agglo-X: Non-agglomerated exports.

TABLE 1. CANADA, IRON ORE PRODUCTION AND TRADE, 2010-12

		2010		2011		2012 (p)	
		(tonnes) (1)	($000)	(tonnes) (1)	($000)	(tonnes) (1)	($000)
PRODUCTION (mine shipments)							
	Newfoundland and Labrador	19,075,946	2,986,892	15,837,512	2,199,609	18,642,203	2,645,018
	Quebec	17,008,634	x	19,807,550	x	20,733,916	x
	British Columbia	93,315	x	59,623	x	51,000	x
	Total (2)	**36,177,895**	**5,314,154**	**35,704,685**	**5,505,626**	**39,427,119**	**5,318,858**
		2010		**2011**		**2012**	
EXPORTS		**(tonnes)**	**($000)**	**(tonnes)**	**($000)**	**(tonnes)**	**($000)**
2,601	Iron ore concentrates, non-agglomerated						
	China	3,718,878	334,402	9,634,182	1,093,379	9,963,568	1,143,642
	Japan	537,991	40,297	699,889	79,221	990,086	126,412
	France	2,089,383	140,459	2,148,358	155,802	1,910,639	125,517
	Netherlands	154,863	10,513	1,484,002	154,680	960,762	120,791
	Taiwan	–	–	163,298	19,324	363,655	48,082
	Germany	2,200,900	161,738	903,298	61,293	688,696	45,613
	Belgium	668,508	45,327	303,108	19,421	599,164	39,223
	Spain	370,244	24,117	444,756	28,869	383,949	25,416
	Other countries	1,354,917	116,819	779,221	100,662	582,422	60,498
	Total	**11,095,684**	**873,672**	**16,560,112**	**1,712,651**	**16,442,941**	**1,735,194**
2,601	Iron ore, agglomerated						
	China	3,583,704	471,624	3,576,647	539,663	5,195,302	676,789
	United States	4,100,136	439,687	3,579,478	567,029	3,496,855	553,784
	Netherlands	143,316	11,436	1,553,321	199,025	2,299,563	315,626
	Trinidad and Tobago	1,754,772	176,933	1,689,720	196,947	1,774,137	206,317
	France	1,461,051	127,459	1,596,850	170,212	1,629,387	153,627
	Qatar	153,428	14,398	305,987	62,886	455,211	94,000
	Germany	5,107,146	559,959	1,428,998	179,289	645,064	67,086
	United Kingdom	915,954	80,067	418,411	52,077	451,456	59,829
	Turkey	310,521	29,788	159,091	23,805	492,139	57,600
	Oman	–	–	154,144	28,406	299,846	53,813
	Italy	660,047	58,733	427,533	74,483	255,326	34,625
	Japan	304,685	36,390	399,991	62,602	251,903	31,191
	Other countries	2,892,734	291,835	2,139,802	291,326	841,557	95,478
	Total	**21,387,494**	**2,298,309**	**17,429,973**	**2,447,750**	**18,087,746**	**2,399,765**
Total exports		**32,483,178**	**3,171,981**	**33,990,085**	**4,160,401**	**34,530,687**	**4,134,959**
IMPORTS							
2,601	Iron ore concentrates, non-agglomerated						
	Mexico	21,505	4,880	25,496	5,251	76,655	19,541
	United States	80,312	2,108	52,413	3,852	20,528	2,930
	Sweden	26,763	4,697	508	112	15,081	2,616
	Chile	22	. . .	51,328	12,778	6,959	1,796
	Other countries	338	16	462	37	106	26
	Total	**128,940**	**11,701**	**130,207**	**22,030**	**119,329**	**26,909**
2,601	Iron ore, agglomerated						
	United States	7,997,175	904,858	6,993,983	882,505	6,353,056	871,812
	Netherlands	–	–	–	–	27,511	1,490
	Other countries	14	. . .	4,398	222	8	. . .
	Total	**7,997,189**	**904,858**	**6,998,381**	**882,727**	**6,380,575**	**873,302**
Total imports		**8,126,129**	**916,559**	**7,128,588**	**904,757**	**6,499,904**	**900,211**

Sources: Natural Resources Canada; Statistics Canada.

– Nil; **. . .** Amount too small to be expressed; (p) Preliminary; x Confidential.

(1) Dry tonnes for production (shipments) by province or territory; natural weight for imports and exports. (2) Total iron ore shipments include shipments of by-product iron ore.

Notes: Numbers may not add to totals due to rounding. Harmonized System code descriptions in this table may have been abbreviated.

TABLE 2. WORLD PRODUCTION OF IRON ORE, SHIPMENTS, GROSS WEIGHT, (1) BY COUNTRY, 2010-12

Country	2010	2011	2012 (e)	2011 to 2012	Global Rank
	(million tonnes)			(% change)	
China	1,070	1,144	1,310	14.5	1
Australia	433	488	525	7.6	2
Brazil	370	373	375	0.5	3
India	230	240	245	2.1	4
Russia	101	100	100	0.0	5
Ukraine	78	81	81	0.0	6
South Africa	59	60	61	1.2	7
United States	50	55	53	-3.6	8
Canada	**36**	**34**	**40**	**17.6**	**9**
Iran	28	28	28	0.0	10
Kazakhstan	24	25	25	0.0	11
Sweden	25	25	25	0.0	12
Venezuela	14	17	20	17.6	13
Mexico	14	15	13	-13.3	14
Mauritania	11	12	12	0.0	15
Others	50	59	61	3.4	16
Total	**5,593**	**2,756**	**2,974**	**7.9**	**n.a.**

Sources: U.S. Geological Survey, 2012 review on iron ore, estimated production for 2012; UNCTAD *2012-2014 Iron Ore Market Report*.
(e) Estimated; n.a. Not applicable.
(1) Insofar as availability of source permits, gross weight in this table represents the non-duplicative sum of marketable direct-shipping iron ore and iron ore concentrates. Iron agglomerates produced from imported iron ore have been excluded under the assumption that the ore from which such materials are produced has been credited as marketable ore in the country it was mined.