

26 March 2021

# Mining

# Top Rated Iron Ore Pellet Feed Project in the World



| Rey Data            |             |
|---------------------|-------------|
| Listing:            | TSX         |
| Ticker:             | BKI         |
| Shares Outstanding: | 259,939,588 |
| Share Price:        | C\$0.46     |
| Market Cap:         | C\$119.57   |
| Cash Balance:       | C\$1.98     |
| Debt                | C\$1.93m    |
| Warrants:           | 58,557,860  |
| Av exercise price:  | C\$0.20     |
| Options:            | 14,617,500  |
| Av exercise price:  | C\$0.1      |
| DSU                 | 9,040,848   |
| Fully Diluted:      | 342,155,796 |
| Asset Location:     | Ukraine     |

| <u>Resources</u>    |          |          |  |  |  |  |
|---------------------|----------|----------|--|--|--|--|
|                     |          |          |  |  |  |  |
|                     | Tonnage  | Fe Total |  |  |  |  |
|                     | (Mt) (%) |          |  |  |  |  |
| Measured            | 355      | 32.0%    |  |  |  |  |
| Indicated           | 290      | 31.1%    |  |  |  |  |
|                     |          |          |  |  |  |  |
| Total M&I 646 31.6% |          |          |  |  |  |  |
|                     |          |          |  |  |  |  |
| Inferred            | 188      | 30.1%    |  |  |  |  |

Analyst

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### **Black Iron**

Black Iron (TSX:BKI) are developing the Shymanivske Iron ore pellet feed mine in heart of the KrivBass iron ore mining district in Ukraine.

- Highest return unfinanced greenfield project in the world (Wood Mackenzie)
- Expected Opex of US\$33/t lowest cost undeveloped pellet feed project Globally (CRU) when adjusting to 62% iron content and transportation to China
- Current Measured & Indicated Resource of 645.8Mt at 31.6% Fe
- Phase 1 4Mtpa ramping up to 8Mtpa in Phase 2
- 17-year mine life, with the orebody remaining open to the north and at depth
- Existing infrastructure and logistics (power, rail and port) with LOI's in place
- High-grade product 68% Fe, puts it in top 4% for quality globally and substantially reduces greenhouse gas emissions during steel production
- NPV<sub>10%</sub> of US\$1.4Bn, 34% IRR, a 2.9 year pay-back at a US\$62/t LT iron ore price
- Tianjin Benchmark currently at US\$174/t (181% above the price used in the PEA)
- Expected Opex of US\$33/t lowest cost undeveloped pellet feed project Globally (CRU) when adjusting to 62% iron content and transportation to China
- Experienced management team capable of delivering project
- Strong local support at all levels including President of Ukraine
- US\$170m potential savings in tax and duties
- Non-binding agreements for debt, mezzanine and royalty funding in place
- Phase 1 capex of US\$452m potentially funded

In terms of valuation metrics, if we look at after tax NPV<sub>8%</sub> using current broker consensus long term Fe price of US\$68.75/t or earnings multiples for existing iron pellet producers in Ukraine, both then heavily discounted by 90% for financing and construction risk, we get a valuation between US\$182-US\$316m. This is a 1.8-3.16 multiple of the company's current market capitalisation of C\$124.82m (US\$99.86m).

This all leads us the believe that for those comfortable with the Ukraine, this is the most exciting iron ore development project available in the world today.

#### Disclaimer

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# Black Iron – Ready to Launch

Black Iron (TSX:BKI) are developing the Shymanivske Iron ore pellet feed mine in heart of the KrivBass iron ore mining district in Ukraine. The project is surrounded by 7 other open pit iron ore mines and the availability of existing infrastructure, including rail, port, power and water means BKI can develop the project in two phases, reducing initial capital requirements and funding the second phase from cashflow.

The March 2020 PEA was based on an initial 4Mtpa with Phase 2 ramping up to 8Mtpa of a premium grade 68% Fe pellet feed over a 17-year mine life; with the orebody remaining open to the north and at depth. According to CRU, the estimated opex costs of US\$33/t, once normalized to a 62% iron content product shipped to China, make it the lowest cost undeveloped pellet feed project in the world. Nonbinding agreements for debt, mezzanine and royalty funding are in place which could fund the entire Phase 1 capex of US\$452m. Finalising this funding and surface land access are the final items before construction can commence.

Using a US\$62/t long term benchmark iron price, the project returns a NPV<sub>10%</sub> of US\$1.4bn and a 34% IRR, which according to Wood Mackenzie, makes it the highest return unfinanced greenfield project in the world. Given the benchmark iron price is currently US\$174/t, 181% above the price used in the PEA, there is considerable upside to valuation.

The management team (Appendix A), led by CEO Matt Simpson, former General Manager for Rio Tinto's Iron Ore Company of Canada, which produces 17.9Mtpa of iron ore pellets and concentrate. Leads us to believe that, for those comfortable with the Ukraine, this is the most exciting iron ore development project available in the world today.

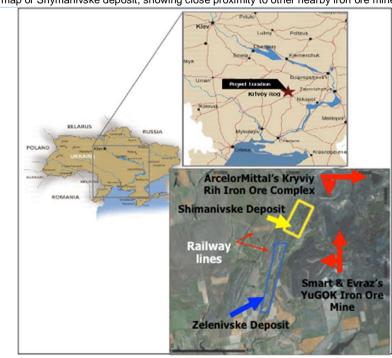
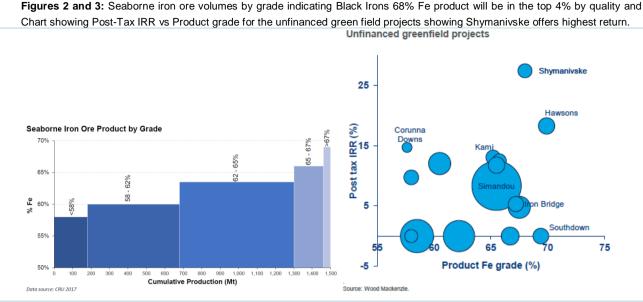
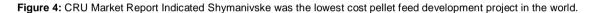


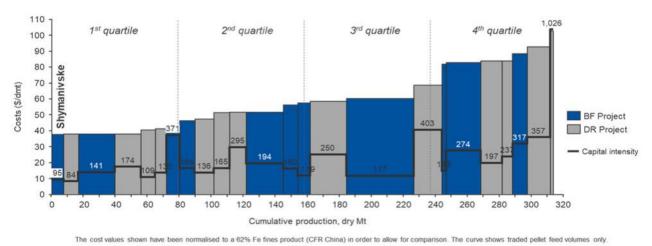
Figure 1: Location map of Shymanivske deposit, showing close proximity to other nearby iron ore mines and infrastructure.

Source: Black Iron



Source: Black Iron, CRU, Wood Mackenzie (2020)





The capital intensity curve (shown as the black line in the above chart) is calculated as the capital cost of the project + the annual capacity of the project. It shows how much investment is required per tonne of annual capacity.

Source: Black Iron, CRU (2020)

# **Project History**

Black Iron listed in Toronto in 2011 raising C\$38m, and over the following three years rapidly advanced the project. In January 2011, it produced a JORC Resource estimate based on historical drilling, forming the basis of a Preliminary Economic Assessment (PEA) produced at the end of the year. The PEA was based on the development of mining and mineral processing operations capable of producing 7.3Mtpa of iron ore concentrate grading 67% Fe, and included an option to add a 7.6Mtpa acid blast furnace pellets at the mine site. A year later this study was upgrade to a full Feasibility study (FS), this time based on the development of 9.2Mtpa of iron ore concentrate capacity producing a 68% Fe product. In January, 2014 the FS was updated to 9.9Mt based on full pilot plant test work resulting in a more compact and efficient processing plant.

At this stage, having secured a C\$511m construction finance commitment from Metinvest and was in advanced negotiations for a pre-paid offtake agreement, BKI commenced gearing up to start construction.

However, in February 2014 following the removal of Ukrainian president Viktor Yanukovych (after he refused to sign an association agreement with the European Union in November 2013) saw the start of the Russo-Ukrainian War and the project being put on care and maintenance until 2018. During this period Metinvest divested as did the company's two largest shareholders, and offtake discussions collapsed on the back of weak iron ore prices.

As the political situation in Ukraine stabilized, currently at peace based on a July 2020 ceasefire, in late 2017 BKI revisited the project, the resultant PEA splitting the project into two smaller development phases, reducing the initial capex from over US\$1Bn to produce 9.9Mtpa to US\$452m for 4Mtpa, in the environment of strong iron ore demand, have again attracted significant investment interest to develop the project.

Prior to the middle of 2014, Ukraine artificially pegged its currency at 8 Ukrainian hryvnia (UAH) to US\$1, but since switching to a floating rate the exchange rate now averages around 28UAH:US\$1. After allowing for inflation, Black Iron's cost to construct and operate Shymanivske is now roughly two-thirds lower than it was when it was gearing up for construction in 2014.

# Geology

The Shymanivske project is situated in the Kryvyi Rih Basin, a Paleoproterozoic synclinorium structure in the Archean Ukrainian Shield; one of several Ukrainian iron formation-hosting basins on micro-plate boundaries. The iron formation on the Property is of the Lake Superior-type, consisting of banded sedimentary rocks composed principally of bands of iron oxides, magnetite and hematite within quartz or chert-rich rock, and contains variable amounts of silicate, carbonate and sulphide lithofacies. Such iron formations have been one of the principal sources of iron throughout globally.

The mineralisation of economic interest is a magnetite-rich taconite that contains minor hematite throughout with some supergene iron mineralization with associated concentrations of martite and goethite/limonite. The taconite mineralisation extends along the entire NE-SW extent of the Property for 2.2 km and beyond, occuring over a width of 800m to 1 km in a NW-SE direction. The taconite is folded and its true thickness varies throughout because of tectonic thickening, erosion and possibly the original basin topology. The true thickness of the iron formation package, including the intervening inter-oxide iron formation "slate" members, is on the order of 200m to 250m.

# **Exploration and Resources**

Black Iron initiated exploration of the Property in 2011 and over time conducted Phase I and Phase II diamond drilling programmes as well as ground magnetic and gravity surveys, including satellite imaging. Over both phases, BKI drilled 70 holes for a total 17,477m. Including historic verified data a total of 54,000m of drilling data was available for the resource estimation.

In December, 2011 BKI estimated an updated in-house Measured and Indicated resource for Shymanivske which was verified by Watts, Griffis and McOuat of 645.8Mt (Table 1), whilst remaining open to the north and at depth.

| Category  | Tonnes (M)  | Fe (Total) % | Fe(mag) % |
|-----------|-------------|--------------|-----------|
| Measured  | 355.1       | 32           | 19.5      |
| Indicated | 290.7       | 31.1         | 17.9      |
| Total     | Total 645.8 |              | 18.8      |
| Inferred  | 188.3       | 30.1         | 18.4      |

Source: Black Iron

The Preliminary Economic Study (PEA) pit optimisation analysis was done based on improved costs, mining dilution and recovery, to calculate the available resources within the open pit design (Table 2). This generated a mineable Measured and Indicated resource of 389Mt at 19.6% Fe (mag).

 Table 2: Subset of Mineral Resources within the Open Pit Design (Above 13% Fe (mag) Cut-off)

|                 |            | 3 (          |           |
|-----------------|------------|--------------|-----------|
| Material        | Tonnes (M) | Fe (Total) % | Fe(mag) % |
| Measured        | 283        | 31.4         | 19.4      |
| Indicated       | 106        | 31.2         | 19.00     |
| Total M&I       | 389        | 31.4         | 19.3      |
| Inferred        | 22         | 31.2         | 19.6      |
| Overburden      | 108        |              |           |
| Waste Rock      | 286        |              |           |
| Total Stripping | 394        |              |           |
| Strip Ratio     | 1.0        |              |           |

Source: Black Iron

# Metallurgical Testwork and Processing

A significant amount of testwork has been completed over a number of years, including during the 2012 BFS by WorleyParsons and pilot scale testwork on major equipment by Lycopodium for the 2014 BFS. Results from this testwork were also benchmarked off of neighbouring operating iron ore mines to further increase confidence. The main conclusion from this was that the iron mineralisation can be processed and upgraded to the targeted specifications with crushing, stage grinding, low intensity magnetic separation and sulphide flotation. Final testwork suggested that a 80% grind size of 32  $\mu$ m was required to achieve a concentrate grading 68% iron, 4.5% silica, with a sulphur content of 0.05% which should be a very attractive product for steel mills with interconnected pellet plants globally.

In order to produce a saleable concentrate with the desired specification, the ore will be processed through stage crushing, stage grinding, low-intensity magnetic separation and sulphide flotation.

### **Economic Study**

BKI released a Bankable Feasibility Study in 2012, which was updated in 2014 to produce 9.9Mtpa for around US\$1Bn, and subsequently re-scoped in 2017 as a

Preliminary Economic Study (PEA) and amended in 2020 to reduce the upfront capital costs based on a two-phased build out of the mine and production plant. After a twoyear construction period the first phase operation would produce 4Mtpa of highgrade 68% iron concentrate for an initial capital cost of US\$452m including a 17% contingency. Production would expand to 8Mtpa starting in the fifth year of production for an additional US\$365m funded largely from cashflow. The PEA was updated in March, 2020 to reflect an updated mine model and strip ratio and the highlights are summarised in Table 3.

**Table 3:** Summary of updated PEA for Shymanivske (2020)

| Production                            | Phase 1: 4Mtpa    |
|---------------------------------------|-------------------|
|                                       | Phase2: 8Mtpa     |
| Product Fe Content                    | 68%               |
| Capex inc 17% Contingency             | Phase 1: US\$452m |
|                                       | Phase 2: US\$364m |
| Opex (av FOB)                         | US\$33/t          |
| LT CFR China benchmark Price (62%)    | US\$62/t          |
| Est Sales Price (68% FOB Yuzhny Port) | US\$97/t          |
| NPV10% Pre-Tax                        | US\$1.9bn         |
| Post-tax                              | US\$1.4bn         |
| IRR Pre-Tax                           | 41%               |
| Post-tax                              | 34%               |
| Av FCV Pre-Tax                        | US\$360m pa       |
| Post-tax                              | US\$301m pa       |
| Est Mine Life                         | 17 years          |

Source: Black Iron

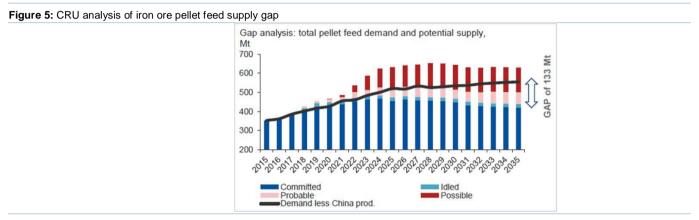
The PEA was based on long term 62% iron ore price delivered to China of US\$62/t. As a premium product BKI's 68% iron content will achieve a premium to this, which was modelled at US\$97/t. This generated a post-tax NPV<sub>10%</sub> of US\$1.4Bn with a 34% IRR, making it the highest return undeveloped iron ore project in the world. However, with the benchmark iron price currently at US\$174/t, 181% above the price used in the PEA, this looks extremely conservative.

#### Table 4: Sensitivity of Pre-Tax NPV and IRR to benchmark iron price and grade premiums

| Pre-Tax IRR and NPV at 10% Discount Rate |                    |                               |               |                |             |           |           |  |
|--|--------------------|-------------------------------|---------------|----------------|-------------|-----------|-----------|--|
|  |                    | Sensitivity to                | Base 62% Fe C | CFR and %Fe Gr | ade Premium |           |           |  |
| 62% Fe                                   |                    | Fe Premium (\$/dmt per 1% Fe) |               |                |             |           |           |  |
| \$/dmt                                   |                    | \$4.00                        | \$5.00        | \$6.00         | \$7.21      | \$8.00    | \$9.00    |  |
| \$50.00                                  | IRR                | 20.4%                         | 24.6%         | 28.6%          | 33.3%       | 36.2%     | 39.9%     |  |
| \$50.00                                  | NPV <sub>10%</sub> | \$545 M                       | \$797 M       | \$1 049 M      | \$1 354 M   | \$1 553 M | \$1 805 M |  |
| \$61.88                                  | IRR                | 28.5%                         | 32.4%         | 36.1%          | 40.5%       | 43.4%     | 46.9%     |  |
|  | NPV <sub>10%</sub> | \$1 044 M                     | \$1 296 M     | \$1 547 M      | \$1 852 M   | \$2 051 M | \$2 303 M |  |
| \$70.00                                  | IRR                | 33.7%                         | 37.4%         | 41.1%          | 45.3%       | 48.1%     | 51.5%     |  |
| \$70.00                                  | NPV <sub>10%</sub> | \$1 384 M                     | \$1 636 M     | \$1 888 M      | \$2 193 M   | \$2 392 M | \$2 644 M |  |
| \$80.00                                  | IRR                | 39.9%                         | 43.4%         | 46.9%          | 51.1%       | 53.7%     | 57.1%     |  |
| \$80.00                                  | NPV <sub>10%</sub> | \$1 804 M                     | \$2 056 M     | \$2 308 M      | \$2 613 M   | \$2 811 M | \$3 063 M |  |
| \$90.00                                  | IRR                | 45.8%                         | 49.2%         | 52.6%          | 56.7%       | 59.3%     | 62.5%     |  |
| \$90.00                                  | NPV 10%            | \$2 224 M                     | \$2 476 M     | \$2 727 M      | \$3 032 M   | \$3 231 M | \$3 483 M |  |

Source: Black Iron

Since late 2016, there are strong indications that the iron ore market is again morphing and favouring higher iron grade products (*i.e.* >62% Fe) at the detriment of lower grade producers. Primarily driven by Chinese steel mills seeking to become more efficient and lessen their environmental footprint, as using pellets removes the need for sintering, the most polluting part of the steel making process, whilst reducing amount of coking coal. As a result, demand for pellet feed demand will continue to grow, with CRU forecasting a supply gap in the next few years growing to 133Mt by 2035, further increasing price premiums. At 68% Fe, we believe that BKIs pellet feed product will have the lowest environmental impact and attract the highest premiums.



Source: CRU (2021)

### Access to Infrastructure

The Shymanivske deposit is located in the Southern part of the Krivbass. There are currently seven operating open pit iron ore mines in the district and the project is less than 2km from two open pit iron ore mines owned by ArcelorMittal and Metinvest/Evraz Steel. This nearby development provides BKI with all the required infrastructure it needs, providing a significant capital construction cost and time savings. The project is 2km from the State owned Moiseevka rail station where dry concentrate will be freighted on a government owned railway to the Black Sea port Yuzhny, owned by TransInvestServic (TIS). In total there are five ports within 230-430km of the project providing access to international markets. Since 2001, PKP Linia Hutnicza Szerokotorowa sp. z o.o. has operated the Broad Gauge Metallurgy Line transporting 10Mtpa of iron ore and coal from Ukraine to the Katowice Steelworks in Poland. In 2020 they ran their first trains from the Chinese city of Xi'an to Sławków in Poland via Ukraine. This is a Broad Gauge Line all the way to the Chinese border carrying only freight which opens the possibility of transporting ore via rail direct from Ukraine to China.

Power is available from the existing 150 kV Gornaya Substation owned by the local power utility Dneprovskaya ElectroEnergetisheskaya Systema, 30km to the south east of the project.

BKI has signed a letter of intent (LOI) for necessary capacity of power and water for processing, rail for haulage, and deep draft port facilities. The city of Kryvyi Rih, with a population of 620k is located only 8km distant, the operational home to ArcelorMittal Kryvyi Rih, Metinvest and Evraz, providing a large pool of skilled labour.

The availability of existing infrastructure enabled BKI to adopted the two phase development, funding the second phase from cashflow and greatly reducing initial capital requirements.

### Financing

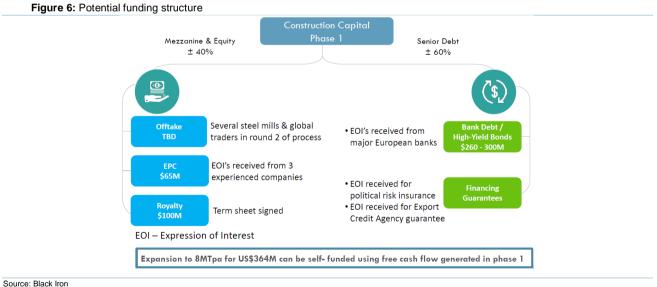
Due to the existing infrastructure, the capex requirements are relatively small for a project of this size, and the company is well advanced in its financing discussions, planning to fund the development through a combination of Senior debt, mezzanine and equity finance (see Figure 6). When evaluating bulk commodity projects, invariably infrastructure is substantially more important that geology.

#### Debt

BKI is in advanced ongoing discussions with international finance institutions and European based banks, several of which are actively lending to producing iron ore companies in Ukraine. Under all the pricing scenarios used in the PEA, the project generates substantial free cash flow and can easily repay the principal and interest. Given the low debt requirement and the fact that benchmark prices are 181% above the current base case used, we believe that this is an attractive project for lenders. To date the company has received nonbinding term sheets from global investment banks for \$260 to \$300 million in first lien financing.

#### Offtake

Due to the proximity to rail, power, ports and people, the fact that the project is scalable, has low capital intensity and operating costs, there is a lot of interest from potential offtake partners. During 2020, a number of interested steel mills and global commodity trading houses visited the Shymanivske Project site as part of their due diligence, to invest in project construction in exchange for long term purchase of Black Iron's Phase 1 pellet feed. The Company has received multiple nonbinding term sheets in this regard. Discussions are now well advanced and BKI expects to announce its first commercial arrangement in the next few months.



#### Royalty

At the end of December, BKI announced that it had entered into a non-binding royalty term sheet for US\$100m with a prominent United States based institutional investor. These funds would be funded upon entering into a binding definitive

agreement and the achievement of certain closing conditions; in exchange the investor is entitled to receive a perpetual 6.75% royalty on the 4Mtpa Phase 1 production.

Conversion of these non-binding commitments would provide sufficient funds to complete the construction of Phase 1 (4Mtpa).

### Ukraine

Ukraine is 2nd largest country in Europe. Ukraine is bordered by Belarus to the north, Russia to the east, the Sea of Azov and the Black Sea to the south, Moldova and Romania to the southwest, and Hungary, Slovakia, and Poland to the west.

Ukraine gained independence after the collapse of the Soviet Union in 1991 and has since veered in between seeking closer integration with Western Europe, and historical and cultural ties with Russia. An uprising against pro-Russian President Viktor Yanukovych in 2014 ushered in a Western-leaning government. Supporting the ethnic Russian community, Russia used the opportunity to seize the Crimean Peninsula and supply armed insurgent groups, occupying parts of the industrialised east. Since July 2020 there has been a cease-fire between the Ukrainian government and Russian-backed forces.

Current President Volodymir Zelensky was elected in March 2019, on a platform of economic and social reform as well as ending the conflict in eastern Ukraine. Since then, Fitch has upgraded Ukraine's Sovereign Risk rating to B (stable). The World Bank also ranks Ukraine in their 2020 annual Doing Business Index 64 out of 190 countries which is a substantial improvement over the last decade.

Agriculture and mining are mainstays of the economy, especially iron ore and coal. Ukraine had eight leading mining and beneficiation complexes (GOKs) working with iron ore. Four of them—the Inguletskiy GOK, the Severnyi, GOK, the Tsentral'nyi GOK, and the Yuzhnyi GOK—were wholly owned by Metinvest. Metinvest also owns the Krivorozhskiy and the Zaporozhskiy iron ore complexes. The Poltavskiy and the Yeristovskiy GOKs are owned by Ferrexpo plc, the Sukha Balka GOK are owned by Evraz Group S.A., and ArcelorMittal Kriviy Rih is owned by ArcelorMittal. Exported iron ore was shipped to China (receiving 45.3% of the total, in terms of value), Poland (10.4%), and the Czech Republic (10.2%).

#### New Investment Laws

In early February, Ukraine's government passed new law aimed to attract investment by providing significant tax reductions and land transfer rights. The highlights of this new law include:

- 1. Tax exemptions no VAT tax on imported equipment and corporate tax concessions
- 2. Duty exemption no import duties need to be paid on new equipment;
- 3. Priority land rights priority rights to lease state and communal land plots needed to realise the investment project; and
- 4. Stabilization of law the rights and duties of the investor shall be governed by the Ukrainian laws in effect at the date the investment agreement is executed unless a new law improves the investor's position.

Implementation of the new laws relating to tax and import duty exemptions does require amendments to the Tax Code of Ukraine and Customs Code of Ukraine which are currently in draft form and need to be adopted to come into effect.

Of the changes that would impact the development of the Shymanivske project:

- Exemption from the corporate profit tax for all income derived from the project during any 5 consecutive years chosen by the investor after the project has been commissioned
- Exemption from paying value added tax for all new equipment imported for the project
- Exemption from import duty for all new equipment imported for the project
- Local authorities are allowed to reduce the land tax for land plots utilized by the project

The total monetary value of the benefits is capped at 30% of the amount of investment made, but for BKI this could realise savings of up to ~US\$170M through a combination of reduced upfront tax/duty payments to construct the project and initial corporate tax payments.

### Permits

The project has strong support in Ukraine both locally and in government. On 21<sup>st</sup> June, 2020 President Zelenskyy, who was born and raised in the same city BKI's project is being developed, released a statement promising co-operation with BKI stating "*It will be a very big cooperation. After all, this is more than a billion dollars of investment in Ukraine, it is very important for Canada, for Black Iron, and it is important for us..."*.

The company is awaiting the surface rights from the Kryviy Rih City Council for the land under which the orebody resides, for a parcel of land for the processing plant, waste rock and tailings from Ukraine's Ministry of Defence and execution of an agreement reached with a neighbouring mine on the relocation of their mine service garage.

In November 2019, BKI signed a Memorandum of Understanding with Ukraine's Minister of Defence on land transfer that is currently being finalised in a binding contract. Once complete, the neighbouring mines service garage will be relocated and a land lease with the City Council can be signed.

In 2004 BKI was granted a 20 year mining permit, with option to renew in 2024 for a further 20 years, so once the land agreements are in place, the company can apply for the construction permit and start overburden removal.

Source: Black

### Figure 7: Permit Process Summary for Shymanivske

| Exploration   | Extraction   | Mining   | Land Allotment  | Construction   | Operations   |
|---|--|--|---|--|--|
| Permit  | Permit   | Allotment  |   | Approval   | Approval   |
| Explore resource<br>potential<br>Conduct<br>geophysical<br>program<br>Drill ore body<br>State approval of<br>explored deposit | Deem deposit<br>economical<br>Complete Ukraine<br>version of scoping<br>study including<br>evaluation of various<br>mining methods &<br>high level<br>environmental impact | Pit shell reserves &<br>environmental<br>impact Gov't<br>approval<br>Complete field<br>environmental (OVOS)<br>& archeological<br>studies for Gov't<br>approval<br>Submit pit shell design<br>& mapped ground<br>surface project for<br>Gov't approval | Obtain surface rights<br>for mine, refinery &<br>tailings<br>Land use analysis<br>based on plot plan<br>showing major<br>buildings & agreed<br>connections to utilities,<br>rail and roads<br>(Proekt)<br>Approval of the<br>project location<br>Approval from all<br>land owners & finalize<br>lease | Start mine<br>overburden removal<br>& plant construction<br>Detailed design<br>approved (Expertisa)<br>Obtaining the<br>construction permit<br>Commissioning of the<br>facility<br>Registration of the<br>ownership to the<br>facility | Operate mine &<br>refinery<br>Ensure compliance<br>with Ukraine<br>Safety, Environment,<br>Health and<br>Employment laws as<br>check by regular<br>Gov't inspections<br>Finalize<br>environmental<br>permits |

# Proxy Valuation – Ferrexpo (LSE:FXPO)

In terms of looking at the potential for Black Iron, the most obvious comparison is LSE listed Ferrexpo. Ferrexpo operates 3 iron ore mines and an iron ore pellet facility in Ukraine. It is mining a 50km strike length of mineralisation divided into 9 orebodies. The current Proven and Probable Reserves are 1.7Bt, whilst it has 6.1Bt of Resources.

Founded in 1960, it listed on the London Stock Exchange in 2007, and has a current market capitalisation of £1.88Bn (US\$2.62Bn). In 2020 it produced 11.2Mt (+7% over the pcp) of 65% premium pellets, making it the 3rd largest exporter of pellets (premium product that costs an incremental ~\$15/T over pellet feed to produce) in world. In its latest financial figures (2019), it reported an average production cost of US\$47.8/t vs average sales price of US\$93.3/t. Revenue for 2019 was US\$1,5Bn, EBITDA US\$586m, NPAT US\$403m, paying a 3.3% yield, and is currently trading on a PE ratio of 7.6.

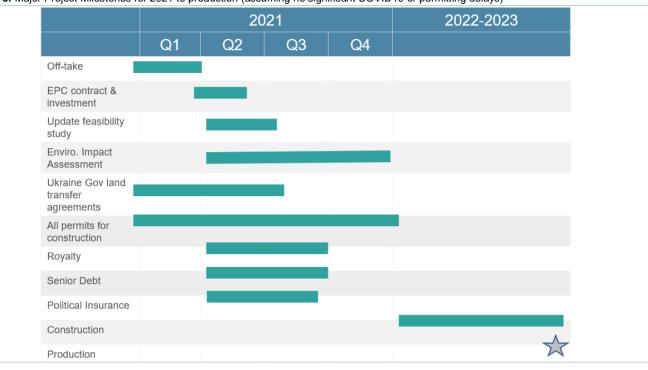
If we apply similar earnings multiples to BKI, based on average life of mine earnings we get a valuation of US\$2.52B. Using peak earnings at the start of Phase 2 production this rises to US\$3.16Bn both using current broker consensus forecast long term price of US\$68.75/t, rather than the current US\$174/t

# **Next Steps**

The next 12 months will see a major step-change in activity for the company as it focusses on entering construction with the key milestones as follows:

- 1. Finalize offtake and equity for construction financing
- 2. Secure surface rights for mine, plant, tailings and waste rock
- 3. Complete revised feasibility study
- 4. Secure debt for construction
- 5. Start construction

#### The construction of Phase 1 is expected to take 2 years.



#### Figure 8: Major Project Milestones for 2021 to production (assuming no significant COVID19 or permitting delays)

#### Source: Black Iron

### Summary

There is no doubt that the conflict between Russia and Ukraine in 2014 set the company back, and this concern remains reflected in the company's share price. However, this is also a great opportunity for investors to get in on a largely technically derisked asset at compelling valuation. BKI is in a very strong position and capable of entering construction within the next 12 months:

- A large resource base to support a 17-year mine life, which remains open to the north and at depth.
- An ultra-high premium product for a growing more environmentally conscious market, with the lowest costs and highest potential returns of any Fe pellet feedstock project worldwide.
- Excellent existing infrastructure, management and local support to the highest levels and funding agreements, albeit currently non-binding in place.

In terms of valuation metrics, if we look at after tax NPV<sub>8%</sub> using the current broker consensus long term Fe price of US\$68.75/t or at earnings multiples for existing iron pellet producers in Ukraine, both then heavily discounted by 90% for country, financing and construction risk, we get a valuation range between US\$182-US\$316m. This is a 1.8-3.16 multiple of the company's current C\$124.82m (US\$99.86m) market capitalisation.

This all leads us to believe that for those comfortable with the Ukraine, Shymanivske is the most exciting iron ore development project available in the world today.

# Appendix A - Directors & Management

#### Board

**Bruce Humphrey (Chairman)** - Former Chairman of Consolidated Thompson Iron Ore and Chief Operating Officer of Goldcorp

**Pierre Pettigrew** - Former Canadian Minister for Foreign Affairs and international Trade

**John Detmold** - Chairman & Founder of Invecture Group, S.A. de C.V. which owns Frontera Copper Corporation

**Dave Porter** - Former VP for Rio Tinto's Iron Ore Company of Canada and COO of Algoma Steel

**Matt Simpson (CEO)** - Former General Manager, Mining for Rio Tinto's Iron Ore Company of Canada

### Management

**Les Kwasik (COO)** - Over 40 years of hands-on experience building and operating mines globally with companies such as with INCO (VALE) and Xstrata (Glencore)

Paul Bozoki (CFO) - Former CFO of CD Capital Partners, operating in Ukraine

**Bill Hart (SVP-Corp Dev)** - 30 years selling iron ore while working for Rio Tinto, Cliffs Natural Resources and most recently Roy Hill Holdings Ltd.

**Pavlo Komarytsky (GM- Shymanivske Steel)** - Extensive network of relationships in Ukraine.

# Research Disclosures



Dr Mark Heyhoe

Dr Heyhoe has over 25 years' experience in mining and natural resources. After working initially as a resource geologist in West Africa and then consultant, he spent eight years in the London capital markets focused on mining. More recently before joining Fox-Davies, he has spent the past 5 years as the COO of a Brazilian mining company taking the company from grass roots exploration, through financing, development and into commercial production. Mark has a PhD in geology and geostatistics and is a Fellow of the Geological Society of London.

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### Research disclosure as of 26 March 2021

| Company Name (the Relevant Issuer) | Disclosure |
|------------------------------------|------------|
| Black Iron Inc                     | 1, 2       |

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