

April 18, 2023

# NEWSLETTER

**CHAMPION IRON** 

**TIER 1 MINING & DEVELOPMENT**

## CHAMPION IRON NEWSLETTER

Since our October 6, 2022 newsletter, Champion Iron Limited ("Champion" or the "Company") reported record iron ore production for the three months ended December 31, 2022, positively impacted by the increasing production contribution from the Bloom Lake Mine's Phase II expansion project ("Phase II"). Following the commencement of commercial production in December 2022, Phase II continues ramping up towards its designed nameplate capacity of 15M tpa. As detailed in our fiscal Q3/2023 results, the pace of the ramp-up was hampered by difficult winter conditions and mining equipment delivery delays required to service the higher design throughput of the Bloom Lake facilities. Despite the delays impacting the ability to supply the additional throughput of the revised plants' capacity, the completed infrastructure has proven its ability to produce at the expected nameplate capacity on several operating days.

Positioning the company as a leader in the green steel supply chain, Champion announced on January 26, 2023, the positive findings of a feasibility study for the Company's Direct Reduction Pellet Feed project (the "DRPF Project"), including an after-tax net present value of \$738.2 million and an internal rate of return of 24.0%. The DRPF Project proposes to upgrade the Bloom Lake Phase II plant to further improve its current high-grade iron ore concentrate at 66.2% Fe to 69% Fe DRPF quality iron ore with combined silica and alumina content below 1.2%. The DRPF Project would result in Champion producing approximately 7.5M tpa of the highest DRPF iron ore quality available on the seaborne market. This higher-purity product is a raw material required by the steel industry in its accelerating shift towards reducing emissions. As such, DRPF product is a primary feed to produce Direct Reduction ("DR") grade pellets, which are then converted into direct reduced iron ("DRI") utilized in the Electric Arc Furnace ("EAF") steelmaking route. DRPF quality iron ore represents a drastic improvement over lesser quality iron ore that exclusively serves the Blast Furnace/Basic Oxygen Furnace ("BF/BOF") steelmaking process, which includes the use of coal and produces significantly higher emissions.

### DRPF PROJECT



Source: Champion Iron Limited

While Champion continues working on other organic growth opportunities within its portfolio, including the upcoming feasibility studies on the Kami project and the Pointe-Noire pellet plant, expected by the end of the current calendar year, we believe the most compelling opportunity is to maximize our product quality to align with the steel

industry's accelerating transition towards green steelmaking.

### DRPF → CRITICAL FOR GREEN STEELMAKING

In order to stay below the two-degree warming ceiling agreed to in the Paris climate agreement, governments globally are supporting heavier emitting industries to adopt drastic reduction strategies. The transportation sector is an obvious beneficiary of such support, with manufacturers and consumers alike receiving subsidies to produce and purchase electric vehicles. A less visible beneficiary is the steel industry, which emits approximately 8% of global CO<sub>2</sub> emissions<sup>1</sup>, nearly as much as all passenger vehicles globally. In fact, we are continuously witnessing governments implementing programs to motivate steelmakers to deploy decarbonizing initiatives, evident in recent announcements such as:

- Algoma Steel and ArcelorMittal Dofasco in Canada receiving CAD\$1,320M from provincial and federal governments<sup>2</sup>;
- the UK government expecting to fund £600M to British Steel and Tata Steel UK for the green switch; and<sup>3</sup>
- the European Commission approving €515M to support ArcelorMittal towards decarbonizing objectives in Spain and Germany.<sup>4</sup>

Additionally, the Biden-Harris Administration, through the U.S. Department of Energy, announced approximately \$6 billion in funding to accelerate decarbonization projects for energy-intensive industries, including iron and steel.<sup>5</sup> Most government support announcements are directly aligned with a proposed transition away from the BF/BOF and towards the DRI/EAF steelmaking method, resulting in reducing emissions by more than half. In fact, recently announced and under construction EAF projects in the steelmaking regions of China, Europe, and North America suggest that EAF steelmaking capacity will double by 2030, compared to a 2015 base year.<sup>6</sup> Such a transition will drastically shift the raw material supply chain for steel making, resulting in additional demand for high quality scrap and Ore Based Metallics ("OBM") such as pig iron and DRI. While governments are focused on supporting the shift in steelmaking methods to reduce emissions, little attention is allocated to the raw materials required for the accelerating increase in anticipated additional EAF capacity:

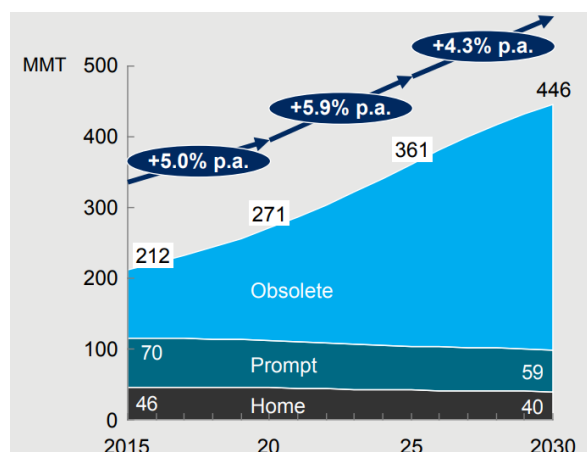
- Scrap: quality and limited availability from an already saturated industry;
- Pig Iron: being produced via the BF process, including the use of coal, and responsible for most of the emissions from the BF/BOF process (i.e., the process governments are sponsoring to discontinue); and
- DRI: requiring high-purity iron ore feed, which is only available from a handful of regions globally.

While scrap is a leading raw material to service EAF's, the availability of high-quality scrap, known as "prime scrap", is depleting in many mature economies as manufacturers become more efficient. In contrast, the availability of lower quality scrap, known as "obsolete scrap", is increasing but includes residuals such as copper which limits the ability to manufacture complex steels.<sup>7</sup> In order to dilute residuals in

obsolete scrap, OBMs such as DRI must be charged in the mix. In fact, current copper in recycled scrap in North America contain between 0.25 and 0.30 weight % of copper – requiring a blend ratio of around 70% OBMs to reach the desired chemistry target.<sup>8</sup> As consumer products become more complex, copper residual in scrap steel is set to increase. For example, the copper residual embedded in the scrap steel of an electric vehicle is expected to be three times more than in comparable combustion engine vehicle. As such, copper in scrap is expected to nearly double by 2050, which would require a rising blend ratio of OBM.<sup>9</sup>

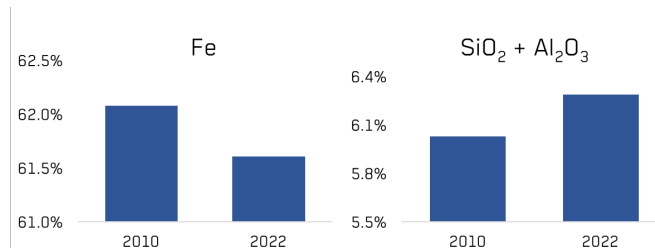
Without the use of OBMs to dilute residuals, this obsolete scrap cannot be utilized for producing high-strength and complex steels, potentially leaving landfills with significant amounts of obsolete scrap. Adding to the complexity for steelmakers to secure scrap, several governments, including Europe, USA, Japan and India,<sup>10</sup> have made recent announcements to limit or ban scrap exports from their respective countries for strategic purposes.

As China's impressive economic boom from prior decades is set to increase the availability of end-of-life scrap, including from buildings and infrastructure, low quality scrap supply is also set to increase significantly, which would also be supportive for the need of OBMs in blending residuals. In fact, China's mix of obsolete scrap is set to nearly double by 2030, compared to declining prime scrap availability (prompt/home scrap). This expected increase in obsolete scrap availability in China may lead the country to become a net exporter of obsolete scrap, further increasing the need for OBM globally in managing residuals.<sup>11</sup>



Source: McKenzie & Company<sup>12</sup>

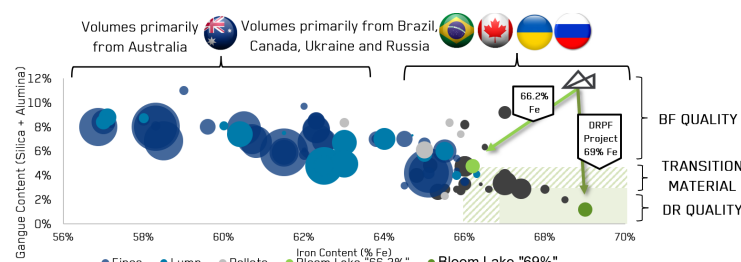
High-purity iron ore capable of producing the much-needed OBMs is therefore becoming critical for the green steel supply chain. In contrast to the increase in purity required to align with the transition in the steel industry, the global average iron ore production Fe quality is rapidly declining in tandem with rising gangue content (silica and alumina), resulting in less than 5% of total iron ore produced globally qualifying as DRPF quality iron ore.



Source: Champion Iron Limited, Wood Mackenzie 2022 data

Producing DRPF also presents its own challenges, including the requirement for high-purity resources, substantial capital investments to build concentration facilities, tailings management, and access to power, among other factors. As such, challenges in maintaining DRPF quality iron ore are growing apparent as the percentage of the global iron ore production qualifying for DRPF quality declined from over 12% in 2017 to less than 5% in 2022<sup>13</sup>. As a result of this low availability of supply, market experts forecast that the world will face a significant DR supply deficit in the coming years.<sup>14</sup> New supply of high-purity projects from known producing hubs such as Brazil, Ukraine, Russia, Sweden, and Canada will, therefore, become critical to service the green steel transition.

While Champion's current market leading high-grade 66.2% Fe iron ore concentrate already contributes towards reducing emissions by approximately 10% in the BF/BOF process,<sup>15</sup> the proposed 69% Fe DRPF quality iron ore is expected to be the one of the purest DR feeds globally and would contribute towards reducing emissions by more than 50% as steelmakers transition to DRI/EAF steelmaking. Additionally, DRPF iron ore can offer the possibility of achieving near zero emissions in steelmaking, if combined with hydrogen based DRI-EAF steelmaking methods. Such purity will enable steel makers to manage raw material sourcing by potentially using lower quality scrap while managing residual levels in scrap blending.



Source: Champion Iron Limited, Wood Mackenzie 2022 data

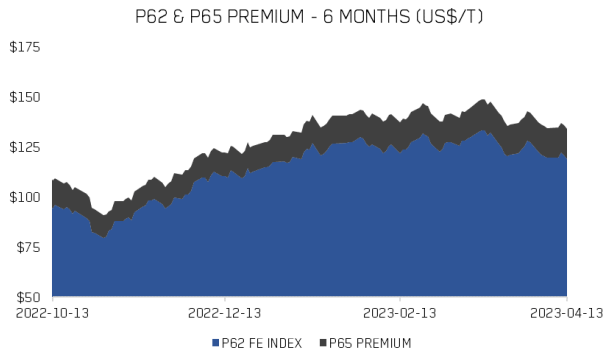
## MARKET UPDATE

Iron ore prices have significantly increased since our previous October 2022 newsletter, supported by recovering macroeconomic factors in China and improved steel production in Europe. In fact, the Platts 65% Fe index increased by over 45% from the multi-year low set on October 31, 2022, including an increasing premium over the lower quality P62 iron ore benchmark, as steel mill profitability improved globally and as China renewed emission controls for the steel industry, after a long period



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of relaxed policy as the economy was operating at a reduced rate in light of the COVID-zero policies.<sup>16</sup>



Source: Champion Iron Limited, Platts Data

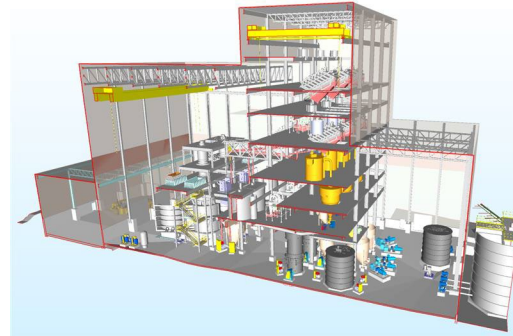
Further supporting industrial and construction activity, following China's abrupt relaxation of COVID-zero policies, there were several announcements of economic stimulus after the Chinese New Year Holiday. As such, Beijing continues to step up its pro-growth rhetoric with measures ranging from addressing the liquidity crisis in the property sector to stimulating construction projects<sup>17</sup>. As a result, China's crude steel production shows clear signs of a recovery as the Worldsteel Association reported six out of the last seven months with year-over-year output increases.<sup>18</sup> While much of the world ex-China's economies have decelerated, easing energy prices have led to select operations across Europe restarting steel plants after months of being idled.<sup>19</sup> Additionally, other major steel making hubs in Japan and South Korea are recovering following a 5% year-on-year decline in 2022, led by growth in automotive output and a revival in manufacturing exports.<sup>20</sup>

In tandem with the global steel output recovery, iron ore supply continued to lag production expectations. While Australian operations were largely unaffected through the cyclone season, rainfalls in Brazil averaged 55% more rain in January and February of 2023, compared to the previous five-year average,<sup>21</sup> likely contributing to reduced iron ore exports. This disruptive seasonal effect also significantly pressured the C3 freight index (Brazil-China), predominately used by Champion, to levels not seen since March 2021.

## **THANK YOU TO OUR STAFF & PARTNERS**

We are fortunate to leverage a highly motivated workforce and supportive partners, enabling our Company to create a positive impact for our host communities and stakeholders. Representing the largest mining project to be completed in Canada over the last decade, our people are proud of their contributions resulting in the recent completion of the Phase II project. While we are fortunate to control a rare resource required for the transition towards green steelmaking, our success relies on our stakeholders supporting our vision.

## **DRPF PROJECT**



## **PHASE II – COMMERCIAL PRODUCTION**



**David Cataford**  
Chief Executive Officer



**Michael O'Keeffe**  
Executive Chairman of the Board



**Michael Marcotte**  
Senior Vice-President, Corporate  
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**FOR ADDITIONAL INFORMATION ON CHAMPION IRON LIMITED, PLEASE VISIT:**

Our website at [www.championiron.com](http://www.championiron.com)

This newsletter has been authorized for release to the market by the CEO of Champion Iron Limited, David Cataford.

The information regarding the Phase II expansion of Bloom Lake has been taken from the Phase II Feasibility Study announced on June 20, 2019 and filed on August 2, 2019. Champion is not aware of any new information or data that materially affects the information included in the Phase II Feasibility Study and confirms that all material assumptions and technical parameters underpinning the estimates in the Phase II Feasibility Study continue to apply and have not materially changed. The Phase II Feasibility Study dated August 2, 2019 is available at [www.sedar.com](http://www.sedar.com).

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**FORWARD-LOOKING INFORMATION**

This newsletter includes certain information that may constitute "forward-looking information" under applicable securities legislation. All statements, other than statements of historical facts, included in this newsletter that address future events, developments or performance that Champion expects to occur, including statements regarding: (i) the Phase II expansion project, its nameplate capacity and completion schedule; (ii) the DRPF Project and related feasibility study, project economics, expected production metrics, technical parameters, efficiencies and benefits; (iii) studies to evaluate the re-commissioning of the Pellet Plant and the commercial production of a 69% Fe DR pellet feed product and their results and expected timeline; (iv) the Kami project updated feasibility study and its anticipated completion date; (v) the Pointe-Noire pellet plant feasibility study and its anticipated completion date; (vi) shift in the steel industry to reduce emissions, announcements to address elevated emissions embedded in steel, increase in DRI demand and EAF capacities and the Company's positioning in connection therewith; (vii) global macroeconomic conditions and factors that could influence the steel market and iron ore production (including supply, demand and premiums) and expected benefits thereof for the Company; (viii) impact of the Company's operations on the environment and communities; (ix) greenhouse gas and CO2 emissions reduction objectives; (x) carbon costs reduction; and (xi) the Company's growth, opportunities and vision generally, are forward-looking statements. Forward-looking statements are statements that are not historical facts and are generally, but not always, identified by the use of words such as "plans", "expects", "is expected", "budget", "scheduled", "estimates", "continues", "forecasts", "projects", "predicts", "intends", "anticipates", "aims", "targets" or "believes", or variations of, or the negatives of, such words and phrases, or state that certain actions, events or results "may", "could", "would", "should", "might" or "will" be taken, occur or be achieved. Although Champion believes the expectations expressed in such forward-looking statements are based on reasonable assumptions, such forward-looking statements involve known and unknown risks, uncertainties and other factors, most of which are beyond the control of the Company, which may cause the Company's actual results, performance or achievements to differ materially from those expressed or implied by such forward-looking statements. Factors that could cause the actual results to differ materially from those expressed or implied in forward-looking statements include, without limitation: project delays; changes in the assumptions used to prepare feasibility studies; continued availability of capital and financing and general economic, market and business conditions; general economic, competitive, political and social uncertainties and unrest, including the Russia-Ukraine crisis, its development and its impact on the steel and iron ore industries and the global economy; the effects of

catastrophes and public health crises, including the impact of COVID-19 on the global economy, the iron ore market and Champion's operations; future prices of iron ore; failure of plant, equipment or processes to operate as anticipated; delays in obtaining governmental approvals, necessary permitting or in the completion of development or construction activities, as well as those factors discussed in the section entitled "Risk Factors" of the Company's 2022 Annual Information Form and the risks and uncertainties discussed in the Company's Management's Discussion and Analysis for the year ended March 31, 2022, all of which are available on SEDAR at [www.sedar.com](http://www.sedar.com), the ASX at [www.asx.com.au](http://www.asx.com.au) and the Company's website at [www.championiron.com](http://www.championiron.com). Champion cautions that the foregoing list of risks and uncertainties is not exhaustive. There can be no assurance that such information will prove to be accurate as actual results and future events could differ materially from those anticipated in such forward-looking information. Accordingly, readers should not place undue reliance on forward-looking information. All of Champion's forward-looking information contained in this newsletter is given as of the date hereof and is based upon the opinions and estimates of Champion's management and information available to management as at the date hereof. Champion disclaims any intention or obligation to update or revise any of its forward-looking information, whether as a result of new information, future events or otherwise, except as required by law. If Champion does update certain forward-looking information or statements, no inference should be drawn that it will make additional updates with respect to those or other forward-looking statements or information. Investors and others should carefully consider the above factors as well as the uncertainties they represent and the risks they entail. Inherent in forward-looking statements are risks, uncertainties and other factors beyond the Company's ability to predict or control. The forward-looking statements contained herein are made as of the date hereof or such other date or dates specified in such statements.

\*P62: Platts TSI IODEX 62% Fe CFR China; P65: Platts IO Fines 65% Fe CFR China; C3: Freight rate Tubarao-Qingdao

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## REFERENCES

- 1 World Bank data, Wood Mackenzie data
- 2 ArcelorMittal February 15, 2023, Algoma Steel July 5, 2023
- 3 BBC News January 23, 2023
- 4 Platts February 17, 2023
- 5 U.S. Department of Energy, March 8, 2023
- 6 S&P Global Research
- 7 McKinsey, 2017
- 8 CIX, 2022
- 9 CIX, 2022
- 10 Steel News, Jan 18, 2023. Argus Media, February 6, 2023.
- 11 Mackenzie & Company, March 2017
- 12 Mackenzie & Company, March 2017
- 13 Wood Mackenzie data, including transition DRPF quality material
- 14 Wood Mackenzie, September 2022
- 15 Wood Mackenzie data (Based on Wood Mackenzie estimate of 8% reduction for P65 vs. P58)
- 16 BMO, March 20, 2023
- 17 Bloomberg, February 7, 2023
- 18 Worldsteel Association, February 22, 2023
- 19 BMO, January 20, 2023
- 20 Wood Mackenzie, February 1, 2023
- 21 Wood Mackenzie, February 28, 2023