

Correcting and Replacing: Tsodilo Resources Limited Initiates Collaboration to Study the Production of a Pellet Feed Direct Reduced Product Using Botswana Coal for Steel Generation

23.06.2021 | [ACCESS Newswire](#)

TORONTO, June 23, 2021 - [Tsodilo Resources Ltd.](#) ("Tsodilo" or the "Company") (TSX-V:TSD) (OTCQB:TSDRF) (FSE:TZO) is pleased to provide an update on its wholly owned Xaudum Iron Project. The Company has entered into a research collaboration endeavor with the Department of Chemical, Materials and Metallurgical Engineering at the Botswana International University of Science and Technology (BIUST) and Morupule Coal Mine (MCM) to undertake metallurgical studies with respect to the potential of generating a Pellet Feed and Direct Reduced Iron (DRI) product from the Xaudum Iron Formation (XIF) utilizing its magnetite and MCM's coal as a reductant. Commercially, these high-grade pellets and DRI product would be used to produce steel within Botswana, the region and internationally.

There is currently a fundamental shift under way within the steel industry with steel producers under pressure to reduce their carbon footprint and produce steel with lower carbon emissions. Carbon emissions (CO₂) account for around 80% of greenhouse gas emissions (GHG), where the steel making market contributes to roughly 6% of global CO₂ emission. Major corporations including steel producers are focusing on decarbonizing as they target carbon neutrality (Fan and Friedmann, 2021). Climate change issues globally and smog lowering related steel mill curbs on sintering and coal usage in China in particular have focused investors towards projects with higher-grade iron content driving the change that is occurring in the type of iron ore consumed by steel mills from lower-grade energy intensive fines that require sintering towards higher-grade ores and steel making products such as pellet feed and DRI materials.

Blast furnace - basic oxygen furnace (BF-BOF) dominate production but are particularly stubborn to decarbonization technology. Direct reduced iron to electric arc furnace (DRI-EAF) production is growing and has far better decarbonization potential. Emission controls and demand for less carbon intensive steel production will become the norm and steel producers demands for DR quality pellet feed will continue to increase. This shift represents significant opportunities for high-grade magnetite projects like the XIF project.

The Company's Metallurgical results show that the XIF magnetite product is expected to be a premium high-grade product containing +67% iron magnetite that will be ideal pellet feed material (see, Press Release of 12/17/2013 on the Company's website). This quality grade will place the XIF in the top 4-5% of producers in the world by Fe grade. High-grade magnetite pellet feeds at 67% Fe and above have been shown to lower GHG emissions compared to standard feed of 62% iron hematite fines (Herbertson and Strezov, 2011). The collaboration study with BIUST and MCM will identify if the XIF magnetite can be further beneficiated to a pellet feed and upgraded to a DRI pellet or similar product using Botswana coal as the reductant. MCM coal has proven to be a viable substitute for reductants in metalliferous ores processing, hence the confidence that it can be viable in the DRI process. This DRI product can then be used to produce steel in electric arc furnaces in Botswana, the region and international markets.

High-grade concentrates and pellets of 67% Fe, such as the XIF products, offer a net environmental benefit over its life-cycle compared to classic lower grade, Direct Shipping Ores (DSO) ~62% Fe hematite fines, by saving carbon emissions in steel production. Where this carbon saving is derived from the inherent differences in the chemical make-up of magnetite vs. hematite, where magnetite is exothermic (adds heat to the reaction); has a higher iron content (higher grade); lower impurities; and, reduces fluxing. High-grade ores over 65% Fe currently command larger price premiums over standard ores (62% Fe) resulting in higher margins for suppliers of high-grade products. The current global drive for lower emission steel production results in steel producers dramatically increasing their demand for these high-grade ores. Converting to pellets and DRI only increases the benefits over sinter feed, as pellets are of uniform size melt at a more

equal rate which significantly reduce the time, energy and as such the resultant emissions to produce steel. There will likely be a significant under supply of high purity pellet feed as demand for these high-end materials increases dramatically by steel producers looking to reduce emission output. This demand increase for these high-end materials will also include steel mills that use DRI products as contemplated by the Company. This continued shift towards low emission steel globally means that the high- grade XIF magnetite project is uniquely placed to meet these emerging markets.

The business case for generating pellet feed, DRI products, and low emission steel from the XIF magnetite is just one of the scenarios that are to be evaluated in the Company's current Preliminary Economic Assessment (PEA).

Tsodilo's Chairman and CEO, James M. Bruchs, commented "We are excited by this research collaboration with BIUST and MCB to evaluate the capabilities of generating pellet feed and DRI products for low emission steel production from the XIF magnetite. This extra level of beneficiation within Botswana will create added value and benefits in the form of increased revenue and employment for Botswana. This is just one scenario option amongst several that our PEA will evaluate. The PEA will be a road map for the development of the Xaudum Iron Formation towards production".

About Botswana International University of Science and Technology (BIUST)

The Botswana International University of Science and Technology is a Government of Botswana supported institution established as a research-intensive University that specializes in Engineering, Science and Technology at both undergraduate and graduate (Master's and Doctoral) levels. It aims to increase competitiveness, economic growth and sustainable development; address the shortage of skilled scientists and technologists; increase movement of skilled people across national and boundaries international boundaries; stimulate research, innovation, and technology transfer; improve society's aspirations to improve health, wealth and well-being; address increased demand for access to tertiary education; and enable a more competitive and innovative tertiary education sector.

The University is a national strategic initiative that is intended to serve as one of the key platforms for transforming Botswana's economy and because of its research emphasis, BIUST works with the private sector to meet emerging skills needs of the industry, as well as identifies challenges that can be solved through applied research. (www.biust.ac.bw).

About Morupule Coal Mine (MCM)

Morupule Coal Mine (initially known as Morupule Colliery) was established in 1973 by Anglo American. MCM is currently 100% owned by the Minerals Development Company Botswana (MDCB), itself 100% owned by the government of the Republic of Botswana.

MCM operates a 3 million tonnes per annum (mtpa) mine within a 4 billion tonne classified semi-bituminous thermal coal resource in a fairly favorable geological setting. Current activities exploit reserves of in situ cv of 22-23MJ/kg (adb), supplying mine mouth power plants and other customers. The mine operates its own railway siding that links into the national rail line which transports products to the north and south of the country and into the SADC region. MCM coal has proven to be a viable substitute for reductants in metalliferous ores processing, hence the confidence that it can be viable in the DRI process (www.mcm.co.bw).

Overview

Preliminary work on the Xaudum Iron project has defined a CIM compliant Inferred Mineral Resource Estimate of 441 million tonnes (Mt) with an average grade of 29.4% Fe, 41.0% SiO₂, 6.1% Al₂O₃ and 0.3% P for the Block 1 magnetite XIF. Block 1 is a fraction of the potential XIF magnetite resource. An extrapolated exploration target has defined the XIF to be in the order of 5 to 7 billion tonnes at 15-40% Fe. This exploration target was generated by inversion modelling of ground magnetic geophysical data which was compared and moderated to volumes from drilling data within Block 1 and its potential quantity and grade is conceptual in nature. To date, there has been insufficient exploration to define a mineral resource other than in Block 1 and it is uncertain if further exploration will result in the target being delineated as a mineral

resource.

About the XIF Project

- the project is located in the North-West District of Botswana and is proximate to the Namibian boarder and lies thirty (30) miles from the town of Divundu in Namibia. The Trans Caprivi Railway (TCR) line linking Zambia and Namibia is planned to pass through Divundu providing access to Walvis Bay, Namibia's deep-sea port. The project is also located within forty-three (43) miles of the proposed Mucusso line to Angola's Namibe Port;
- preliminary work on the Xaudum Iron project has defined a CIM compliant Inferred Mineral Resource Estimate of 441 million tonnes (Mt) with an average grade of 29.4% Fe, 41.0% SiO₂, 6.1% Al₂O₃ and 0.3% P for the Block 1 magnetite XIF;
- Block 1 is a fraction of the potential XIF magnetite resource. An extrapolated exploration target has defined the XIF to be in the order of 5 to 7 billion tonnes at 15- 40% Fe. This exploration target was generated by inversion modelling of ground magnetic geophysical data which was compared and moderated to volumes from drilling data within Block 1 and its potential quantity and grade is conceptual in nature. To date, there has been insufficient exploration to define a mineral resource other than in Block 1 and it is uncertain if further exploration will result in the target being delineated as a mineral resource. See, Press Release of 9/14/2014 on the Company's website for further details;
- metallurgical magnetic separation results (Davis Tube Recovery) show an average concentrate of 67.2% Fe, 4.2% SiO₂, 0.5% Al₂O₃, 0.07% P is obtained at P80 grind size of 80 microns, although higher grades are possible at finer P80's. See, Press Release of 12/17/2013 on the Company's website;
- further exploration will be focused on Block 2 where the Company expects an increase in the resource;
- the XIF Project is a potential large and long-life Tier 1 mining project;
- the PEA will evaluate a number of options for development of the project at a variety of scales including:
 - non-traditional but potentially profitable small-scale startup mining production options such as Ferrosilicon (FeSi) production from a magnetite concentrate,
 - mid-size scenarios, whereby magnetite concentrate would be processed through a concentrator and transported to railhead and onto port facilities;
 - large-scale mining options where full-scale mining would produce a magnetite concentrate processed by a concentrator plant with further potential modification to a pellet which would then be transported to port facilities;
- Botswana has significant coal reserves which can be a major advantage for the Xaudum Iron project, allowing for coal to be used in the beneficiation process to generate iron products such as iron pellets, sponge iron, pig iron, and also steel; and,
- the project would represent the first iron deposit to be considered for development in Botswana. Gcwihaba has identified the project as having the potential to positively impact the future economy of Botswana as the country looks to diversify its economy, and help Botswana to reach its goal of moving away from a dependence on diamond revenues.

For more information, refer to the technical report prepared by SRK Consulting (UK) Ltd. for Gcwihaba Resources (Pty) Ltd. titled "Mineral Resource Estimate for the Xaudum Iron Project (Block 1), Republic of Botswana" with an effective date of August 29, 2014 and filed on SEDAR under the Company's profile at www.sedar.com .

An informational presentation of the project can be found on the Company's website at [www.tsodiloresources.com/i/pdf/3\)-Tsodilo-Iron-Project-Overview_March-2021.pdf](http://www.tsodiloresources.com/i/pdf/3)-Tsodilo-Iron-Project-Overview_March-2021.pdf).

References

Z. Fan and S. J. Friedmann, 2021. Low-carbon production of iron and steel: Technology options, economic assessment, and policy. Joule, Volume 5, Issue 4. Columbia SPIA, Center on Global Energy Policy article.

J. Herbertson and L. Strezov, 2011. Implications for Australian Magnetite Industry of the Introduction of a Price/Tax on Carbon. The Crucible Group, June 2011. Submitted to the Joint Select Committee on Australia's Clean Energy Future Legislation by the Magnetite Network (MagNet).

About Tsodilo Resources Limited

[Tsodilo Resources Ltd.](http://www.tsodiloresources.com) is an international diamond and metals exploration company engaged in the search

for economic diamond, metal deposits and industrial stone at its Bosoto (Pty) Limited ("Bosoto"), Gcwihaba Resources (Pty) Limited ("Gcwihaba") and Newdico (Pty) Ltd. ("Newdico") projects in Botswana and its Idada 361 (Pty) Limited ("Idada") project in Barberton, South Africa. The Company has a 100% stake in Bosoto (Pty) Ltd. which holds the BK16 kimberlite project in the Orapa Kimberlite Field (OKF) in Botswana and the PL216/2017 diamond prospection license also in the OKF. The Company has a 100% stake in its Gcwihaba project area consisting of seven metal (base, precious, platinum group, and rare earth) prospecting licenses all located in the North-West district of Botswana. The Company has a 100% interest in its Newdico industrial stone project located in Botswana's Central District. Additionally, Tsodilo has a 70% stake in Idada Trading 361 (Pty) Limited which holds the gold and silver exploration license in the Barberton area of South Africa. Tsodilo manages the exploration of the Newdico, Gcwihaba, Bosoto and Idada projects. Overall supervision of the Company's exploration program is the responsibility of Dr. Alistair Jeffcoate, Project Manager and Chief Geologist of the Company and a "qualified person" as such term is defined in National Instrument 43-101.

This press release may contain forward-looking statements. All statements, other than statements of historical fact, that address activities, events or developments that the Company believes, expects or anticipates will or may occur in the future (including, without limitation, statements pertaining to the use of proceeds, the impact of strategic partnerships and statements that describe the Company's future plans, objectives or goals) are forward-looking statements. These forward-looking statements reflect the current expectations or beliefs of the Company based on information currently available to the Company. Forward-looking statements are subject to a number of risks and uncertainties that may cause the actual results of the Company to differ materially from those discussed in the forward-looking statements, and even if such actual results are realized or substantially realized, there can be no assurance that they will have the expected consequences to, or effects on the Company. Factors that could cause actual results or events to differ materially from current expectations include, among other things, changes in equity markets, changes in general economic conditions, market volatility, political developments in Botswana and surrounding countries, changes to regulations affecting the Company's activities, uncertainties relating to the availability and costs of financing needed in the future, exploration and development risks, the uncertainties involved in interpreting exploration results and the other risks involved in the mineral exploration business. Any forward-looking statement speaks only as of the date on which it is made and, except as may be required by applicable securities laws, the Company disclaims any intent or obligation to update any forward-looking statement, whether as a result of new information, future events or results or otherwise. Although the Company believes that the assumptions inherent in the forward-looking statements are reasonable, forward-looking statements are not a guarantee of future performance and accordingly undue reliance should not be put on such statements due to the inherent uncertainty therein.

Forward-looking statements are subject to a number of risks and uncertainties that may cause the actual results of the Company to differ materially from those discussed in the forward-looking statements and, even if such actual results are realized or substantially realized, there can be no assurance that they will have the expected consequences to, or effects on, the Company. Factors that could cause actual results or events to differ materially from current expectations include, among other things, uncertainties relating to availability and cost of funds, timing and content of work programs, results of exploration activities, interpretation of drilling results and other geological data, risks relating to variations in the diamond grade and kimberlite lithologies; variations in rates of recovery and breakage; estimates of grade and quality of diamonds, variations in diamond valuations and future diamond prices; the state of world diamond markets, reliability of mineral property titles, changes to regulations affecting the Company's activities, delays in obtaining or failure to obtain required project approvals, operational and infrastructure risk and other risks involved in the diamond exploration and development business. Any forward-looking statement speaks only as of the date on which it is made and, except as may be required by applicable securities laws, the Company disclaims any intent or obligation to update any forward-looking statement, whether as a result of new information, future events or results or otherwise. Although the Company believes that the assumptions inherent in the forward-looking statements are reasonable, forward-looking statements are not a guarantee of future performance and accordingly undue reliance should not be put on such statements due to their inherent uncertainty.

Neither the TSX Venture Exchange ("TSXV") nor its Regulation Services Provider (as that term is defined in the policies of the TSXV) accepts responsibility for the adequacy or accuracy of this news release. This news release may contain assumptions, estimates, and other forward-looking statements regarding future events. Such forward-looking statements involve inherent risks and uncertainties and are subject to factors, many of which are beyond the Company's control, which may cause actual results or performance to differ materially from those currently anticipated in such statements.

FOR FURTHER INFORMATION PLEASE CONTACT:

James M. Bruchs Chairman and Chief Executive Officer JBruchs@TsodiloResources.com
Dr. Alistair Jeffcoate Project Manager and Chief Geologist Alistair.Jeffcoate@tsodiloresources.com
Head Office Telephone +1 416 572 2033 Facsimile + 1 416 987 4369
Website <http://www.TsodiloResources.com>

SOURCE: [Tsodilo Resources Ltd.](#)

View source version on accesswire.com:

<https://www.accesswire.com/652818/Correcting-and-Replacing-Tsodilo-Resources-Limited-Initiates-Collaboration-to-Study-the-Production-of-a-Pellet-Fuel>

Dieser Artikel stammt von [Minenportal.de](#)

Die URL für diesen Artikel lautet:

<https://www.minenportal.de/artikel/348062--Correcting-and-Replacing--Tsodilo-Resources-Limited-Initiates-Collaboration-to-Study-the-Production-of-a-Pellet-Fuel>

Für den Inhalt des Beitrages ist allein der Autor verantwortlich bzw. die aufgeführte Quelle. Bild- oder Filmrechte liegen beim Autor/Quelle bzw. bei der vom ihm benannten Quelle. Bei Übersetzungen können Fehler nicht ausgeschlossen werden. Der vertretene Standpunkt eines Autors spiegelt generell nicht die Meinung des Webseiten-Betreibers wieder. Mittels der Veröffentlichung will dieser lediglich ein pluralistisches Meinungsbild darstellen. Direkte oder indirekte Aussagen in einem Beitrag stellen keinerlei Aufforderung zum Kauf-/Verkauf von Wertpapieren dar. Wir wehren uns gegen jede Form von Hass, Diskriminierung und Verletzung der Menschenwürde. Beachten Sie bitte auch unsere [AGB/Disclaimer!](#)

Die Reproduktion, Modifikation oder Verwendung der Inhalte ganz oder teilweise ohne schriftliche Genehmigung ist untersagt!
Alle Angaben ohne Gewähr! Copyright © by [Minenportal.de](#) 2007-2025. Es gelten unsere [AGB](#) und [Datenschutzrichtlinien](#).