

Stock Data

Share Price:	0.28p
Market Cap:	£8.10m
Shares in issue:	2,893m
52-week high/low:	1.35p/0.24p

Company Profile

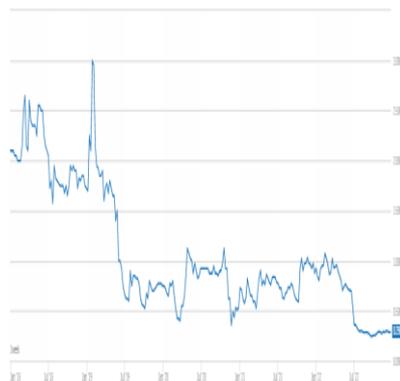
Sector:	Mining
Ticker:	IRON
Exchange:	AIM

Activities

Ironveld plc ('Ironveld' or 'the Group') is the owner of mining rights over approximately 28 kilometres of outcropping Bushveld magnetite with a JORC compliant ore resource of some 56 million tons of ore grading 1.12% V₂O₅, 68.6% Fe₂O₃ and 14.7% TiO₂.

www.ironveld.com/

5-year share price performance



Source: [LSE](https://www.lse.com)

Past performance is not an indication of future performance.

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Ironveld

Ironveld has released its final results for the year ended 30 June 2022. Much as expected, the consolidated income statement details total administrative expenses roughly unchanged on the comparable period, in turn producing a loss for the 12-months of £811k (2021: £465k) as the Board prepared the Group's extensive magnetite resource on South Africa's Limpopo Province to commence mining operations before the end of CY2022. The transformational acquisition of an existing, mothballed 7.5MW capacity smelter in nearby Rustenburg (Ferrochrome Furnaces Pty Limited ('FCF')) that was first announced on 24 May 2022, in turn provides it with the opportunity to economically mine and process this ore into marketable products: high purity iron, vanadium in slag and titanium in slag. The new financial year has since seen things move forward rapidly, with the smelter undertaking an efficient refurbishment programme in tandem with facilitation of all necessary infrastructure at the mine. On 9 December 2022, it was announced that stockpiling of feedstock at Rustenburg would commence that same month, with the smelter's first furnace (of three) becoming operational within weeks, materially ahead of its original schedule. Recognising that this positions Ironveld to become cash generative within its first full year of production, and that the Board's ambitious medium to longer-term vision of building a much larger scaled-up production facility continues to gain credibility, TPI has now prudently modelled the opportunity presented. Based solely on the first phase of proposed commercial expansion, which utilises only its existing wholly-owned plant, the £27.3m DCF valuation derived is more than three-times the Group's current market capitalisation.

(Please note that TPI's valuation is based on financial modelling and there is no guarantee that such a valuation will ever be realised, therefore please do not base investment decisions on this valuation alone. Also please note that past performance is not a reliable indicator of future results.)

Operational & financial highlights for year-ended 30 June 2022

- Acquisition and refurbishment of Rustenburg smelter (funded through a £4.5 million equity Placing post-period end), that will enable Ironveld to mine and process ore for the first time;
- Preparation for mining activity to commence in CY2022; and
- Refurbishment of Rustenburg smelter's first furnace gets underway.

Operational highlights to date during current financial year

- Pre-operations power at the Rustenburg smelter now fully installed, with systems and equipment testing well advanced;
- Smelter refurbishment on schedule with first production in Q1 2023;
- Mining activity commenced operations in December 2022 with ore now being stockpiled at the smelter; and
- Debt Purchase Agreement ('DPA') and Share Purchase Agreement ('SPA') required to formally close the FCF acquisition undertaken and signed by all parties, with final completion expected in coming weeks.

Ironveld Smelting – First production of product suite in Q1 2023

Within the Share Purchase Agreement to acquire 100% of FCF signed by Ironveld Smelting, the only condition precedent was the signing of a DPA with FCF's sole creditor for a total of ZAR 115 million (approx. £5.75 million). On 21 December 2022, Ironveld announced it had agreed and signed all commercial issues in the DPA and SPA. It also noted that the timing of the transaction's final steps to completion would have no effect on the Group's operations, which will continue to move forward as planned. Upon completion, Ironveld and the Business Rescue Practitioner will undertake the formal steps required to remove FCF from Business Rescue.

Having been secured on highly attractive terms, the Rustenburg smelter facility presents the opportunity to substantially de-risk the Group's potentially world-class high purity iron, vanadium and titanium project in the Bushveld, while delivering production that is expected to lead to early generation of cash flows. As was announced on 12 September 2022, Enernet Global Inc. ('Enernet'), the independent power producer ('IPP'), installed a pre-operations power supply at the smelter in order to test and recommission the plant. A planned programme of systems and equipment testing/upgrades is now underway at the smelter and orders have been placed for critical long lead time components. Specialist contractors required for the refurbishment work have already been engaged and are active on site.

Further temporary additional power will be added to this facility to enable scaling up of plant operations in the coming months, prior to completion of Enernet's optimised power solution (including solar, battery storage and gas generation) that is expected in Q3 2023. While the IPP agreement guarantees supply at a discount to the national tariff, it also ensures no reliance on the South African electricity grid at any stage, thereby eliminating operational risk from the relatively unreliable electricity public utility, Eskom, which routinely undertakes daily 'load shedding' programmes. An agreement to incorporate certain aspects of the smelter's required electrical upgrades into Enernet's own project installation, is also expected to enable the Group to make savings in its planned short term capital expenditure.

All necessary environmental and other operational permits have already been put in place to enable the smelter complex's rapid move toward production. High Purity Iron ('HPI') from Ironveld's extensive magnetite resource that is held through a Mining Right on South Africa's Limpopo Province, is expected to contribute in excess of 90% of the Group's revenues going forward (with the balance coming in the form of vanadium and titanium slag credits). Given that raw materials supply can account for as much as 70% of production costs, having its own local source of high-quality ore (including by-product credits) provides the Group with a significant advantage over competition and should enable it to price its output in the lowest cost quartile. Demand for HPI in the form of a water atomized powder ('HPIP') continues to increase from specialist users, including the automotive industry and other manufacturers requiring powder metallurgy/magnetic materials for their final output; production can be blended through incorporation of other metals to impart hardness/wear resistance etc., while self-lubrication can be gained via porosity control. Recognising that this enables HPIP to command a price premium of 40% to 50% over standard HPI, the Group's forward planning includes additional spend (estimated at cUS\$2m) to upgrade its production facility over the coming two years, with strong demand expected to be found through existing offtake agreements.

Ironveld Mining - Commencement of mining operations scheduled to begin in the current quarter

Mining operations commenced earlier this month. Magnetite ore feedstock is now being stockpiled on site at Rustenburg for delivery to the smelter as the three furnaces are sequentially brought into operation. The first full year of steady state production is expected to be reached by 2024/25E, by when the smelter will require c.40,000 tonnes of ore each year. External mining contractors have been engaged on site to minimise capex/related start-up costs. With high local availability of experienced staff for other ancillary works, the Group's Project is expected to create a total of 140 new jobs within its first 12 months of operation. Agreements with local trucking contractors are already in place with indicative costs to transport from mine gate to smelter (c.400km) put at less than US\$50/tonne. Total mine establishment and commissioning costs (including all social commitments) are estimated to be up to ZAR 5 million (<US\$275,000). Ironveld Mining is also investigating options for reselling fines

(inferior grade ore separated from high-grade lump during the process of mining, crushing and screening), which although not suitable for the smelter still find a market amongst third parties willing to undertake beneficiation in order to remove gangue minerals contained therein. This could result in a modest reduction to average mining cost/tonne.

Three separate phases of commercial expansion provide route to early cash flow

Based on delivery of 40,000 tonnes of ore per annum (<4,000tpm ROM), the smelter is expected to provide the following approximate quantities of finished products per annum: 20,000 tonnes of HPI (price range US\$900 to US\$1,000/tonne)/HPIP (price range US\$1,300 to US\$1,500/tonne); 190 tonnes of vanadium in slag (price range US\$5,000-US\$5,300/tonne); and 3,800 tonnes of titanium in slag (price range US\$200-\$300/tonne). This equates to an annualised run rate of US\$27 million to US\$32 million once the facility is producing and selling iron powders. Given the expected short commissioning and preparation time required, ore stockpiling will continue in tandem with the ongoing furnace refurbishment. Estimated operational expenditure ('opex') for HPI production is comfortably below selling prices, while revenues from the Vanadium and Titanium slag of c US\$2 million per annum would flow straight to the bottom line given their effective zero production cost. Sales Contracts, Approved Supplier or Marketing Agreements are already in place for final output of HPI, HPI Powders, Vanadium Slag offtake and Titanium Slag offtake with a number of senior counterparts and well-known international traders.

Based on TPI's estimated total mining cost to smelter of ZAR 1,850/tonne plus all-in transportation of ZAR 800/tonne and smelting cost of ZAR 6,515/tonne, FCF's direct operating costs total ZAR 11,685/tonne (based on a ZAR 2,520/tonne purchase price). Assuming the current US\$: ZAR rate of 17.18, this would be equivalent to the smelter generating annual revenues of US\$25.49m when operating on a steady state of 40,000 process tonnes/year. Including ore sales to FCF of US\$5.87m, Group revenues of US\$31.36m for the year suggests peak attributable pre-tax operating cash flow for the Group of US\$5.05m being achieved in 2026E. After servicing creditors debt payments, local administrative costs and paying away any South African corporation tax dues (at a rate of 27%, although TPI estimates that carried forward losses should ensure this does not apply until after 2029E), Ironveld plc would be entitled to retain 74% the balance owned by its subsidiaries.

While the existing smelter provides a foundation for building a larger scaled-up production facility, the acquired site offers only limited space for expansion. The Board has therefore indicated three separate phases of commercial expansion as detailed below:

- PHASE 1** - The readymade 7.5MW capacity FCF smelter provides a platform for organic growth via demonstration of initial production and sales;
- PHASE 2** - Able to scale the initial project to construct a new 15MW(or larger) smelter located next to the mining area, potentially more than trebling production. Capex costs (estimated at c.US\$56 million), lenders subject to being satisfied with PHASE 1 proof of concept ('PoC');
- PHASE 3** - Long term objective is to add significant additional capacity in order to achieve status of a medium-scale smelter capable of processing the large resource at the Project.

Ironveld's High Purity Iron, Vanadium and Titanium project

Bushveld is a known metallogenic province covering approx. 66,000km², which hosts various mineral deposits including platinum group metals, Vanadium, Chrome, Palladium and Rhodium. The Project has the potential to become a vertically integrated vanadium mining and processing business serving the increasing demand for vanadium in steel alloys and vanadium redox batteries. The Group retains unencumbered rights to:

- 80 million tonnes of magnetite ore - the JORC compliant mineral resources demonstrates that it holds 1.6 billion pounds of Vanadium, the equivalent to four times annual global demand.
- 32 million tons of 99.5% ('High Purity Iron', 'HPI') in situ.
- 9 million tonnes of Titanium.

The Project's 8 April 2013 JORC-compliant mineral resource provided the foundation for a subsequent Definitive Feasibility Study ('DFS') which was published on 23 April 2014. This confirmed its potential to deliver an exceptionally high-grade iron product at 99.5% Fe HPI which typically trades at a premium price in the market. The 56.4Mt ore grading at 1.12% Vanadium Oxide ('V₂O₅') represented almost twice the grade of other Vanadium resources that are currently being mined and processed within the Bushveld Complex.

Ironveld plc – Unique, Undeveloped Polymetallic Project in South Africa's Bushveld Complex



Source: Ironveld, Investor Presentation June 2022

Ironveld's High Purity Iron, Vanadium & Titanium Project

Products – Supplying Growing Demand Markets

PRODUCT*	CURRENT PRICING**	USES
HIGH PURITY IRON POWDER 20,000 tpa	\$1,300-\$1,500/t	<ul style="list-style-type: none"> Sintered components in vehicles, power tools and white goods using Powdered Metallurgy ("PM"): <ul style="list-style-type: none"> Vehicles have 10kg - 27kg of PM components PM manufacturing is quicker, more efficient Other uses – soft magnetic components, welding rods, pharmaceuticals, chemicals, printing, filtration and surface coating
VANADIUM IN SLAG 190 tpa	\$5,000-5,300/t	<ul style="list-style-type: none"> Steel additive to increase strength, toughness and heat resistance <ul style="list-style-type: none"> Used in gears, axles and crankshafts New Vanadium Redox Battery ("VRB") systems under development could significantly impact demand: <ul style="list-style-type: none"> Volume storage for electricity generated by solar and wind
TITANIUM IN SLAG 3,818 tpa	\$200-\$300/t	<ul style="list-style-type: none"> Typically used in alloy with iron, aluminium, molybdenum and manganese Main uses in aerospace, both aircraft and engine Resistant to seawater so also used for hulls and propeller shafts Potential for incorporation in lithium-ion batteries

*Forecast annualised production from FCF Smelter

Source: Ironveld, Investor Presentation June 2022

Valuation – Applying prudent discounted cash flow methodology, TPI derives a valuation of £27.3m for Ironveld

Based on the expectation that Ironveld will be able to fulfil the growth strategy as outlined in this report, TPI has extrapolated estimated free cash flow projections based on the Group's rights to an extensive magnetite resource on South Africa's Limpopo Province along with the successful exploitation of its recently acquired Rustenburg smelter facility. The financial model (detailed overleaf) suggests the Group will generate a positive gross return during the first year (i.e., 2023E) of joint mining and smelting operations, followed by the generation of a positive attributable post-tax profit the following year. TPI's financial model is based on the following assumptions covering exchange rates, mining production, smelting output and sale prices based on existing offtake agreements. The Discounted Cash Flow Model employed utilises an 8% discount rate along with a 2% perpetual growth rate in order to generate a theoretical £27.3m valuation for Ironveld plc.

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<u>Mining in Limpopo Province and Altona Farm Project Areas</u>			<u>Sales prices assumed (based on existing offtake agreements) US\$</u>			
Steady state smelting ore production (tonnes)	40,000		High Purity Iron/tonne	930		
Mining cost per tonne (ZAR)	1,850		High Purity Iron Powder/tonne	1520		
Transportation price to FCF/tonne (ZAR)	800		Vanadium/tonne	7000		
Sale price to FCF/tonne (ZAR)	2,520		Titanium/tonne	400		
FCF smelting cost/tonne (90% up-time) (ZAR)	6515					
FOREIGN EXCHANGE RATES	GBP:US\$	1.22	GBP:ZAR	21.02	US\$:ZAR	17.18
CORPORATION TAX RATES	Sth. African: 27%	UK: 19%				

Source: TPI

Ironveld plc – DCF Summary Valuation Table

Year to December (US\$)	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
	1	2	3	4	5	6	7	8	9	10
DISCOUNTED CASH FLOW MODEL										
Factor	0.92593	0.85734	0.79383	0.73503	0.68058	0.63017	0.58349	0.54027	0.50025	0.46319
Present value by year	-1,663,744	2,988,114	3,474,286	3,712,053	3,311,102	3,022,585	2,756,641	1,024,194	916,134	816,973
NPV8%	20,358,338									
PV of Residual Cash Flow (2% annualised)	13,888,540									
Net cash as at Dec 2022*	-950,000									
DCF valuation (US\$)	33,296,878									
DCF valuation (£)	27,292,523									

*Assuming FCF purchase with credit facility

Source: TPI

Ironveld plc – Financial Model

Year to December (US\$)	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
MINING OPERATIONS										
Ore production tonnes	18,000	33000	38000	43000	43000	43000	43000	43000	43000	43000
Ore sold to FCF tonnes	15,000	30000	35000	40000	40000	40000	40000	40000	40000	40000
Cost of extraction	1,938,300	3,553,551	4,091,967	4,630,384	4,630,384	4,630,384	4,630,384	4,630,384	4,630,384	4,630,384
Sale price to FCF	2,200,233	4,400,466	5,133,877	5,867,288	5,867,288	5,867,288	5,867,288	5,867,288	5,867,288	5,867,288
SA Tax @27%	-	-	-	-	-	-	-	-333,964	-333,964	-333,964
Mining Gross Cash Flow	261,932	846,915	1,041,909	1,236,903	1,236,903	1,236,903	1,236,903	902,939	902,939	902,939
FCF SMELTING OPERATIONS										
Total processed tonnes by FCF	15,000	30,000	35,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
Final production for offtake (tonnes):										
HPI	7,680	10,000	11,667	13,333	13,159	13,159	13,159	13,159	13,159	13,159
HPIP	-	5,630	6,568	7,506	7,506	7,506	7,506	7,506	7,506	7,506
Vanadium slag	67.5	145.0	183.7	193.4	193.4	193.4	193.4	193.4	193.4	193.4
Titanium slag	1,170	900	1,150	1,211	1,211	1,211	1,211	1,211	1,211	1,211
Revenue generated by product:										
HPI	7,142,400	9,300,000	10,850,310	12,399,690	12,237,870	12,237,870	12,237,870	12,237,870	12,237,870	12,237,870
HPIP	0	8,557,600	9,983,360	11,409,120	11,409,120	11,409,120	11,409,120	11,409,120	11,409,120	11,409,120
Vanadium slag	472,500	1,015,000	1,285,900	1,353,800	1,353,800	1,353,800	1,353,800	1,353,800	1,353,800	1,353,800
Titanium slag	468,000	360,000	460,000	484,400	484,400	484,400	484,400	484,400	484,400	484,400
Total FCF Revenues	8,082,900	19,232,600	22,579,570	25,647,010	25,485,190	25,485,190	25,485,190	25,485,190	25,485,190	25,485,190
Direct smelting costs	7,500,000	11,376,601	13,272,701	15,168,801	15,168,801	15,168,801	15,168,801	15,168,801	15,168,801	15,168,801
SA tax @27%	-	-	-	-	-	-	-	-2,785,425	-2,785,425	-2,785,425
FCF Gross Cash Flow	582,900	7,855,999	9,306,869	10,478,209	10,316,389	10,316,389	10,316,389	7,530,964	7,530,964	7,530,964
Total Gross Cash Flow	844,832	8,702,914	10,348,778	11,715,112	11,553,292	11,553,292	11,553,292	8,433,903	8,433,903	8,433,903
ADMIN. & CENTRAL COSTS										
SA Admin. costs	1,450,000	1,950,000	2,245,455	2,540,909	2,540,909	2,540,909	2,540,909	2,540,909	2,540,909	2,540,909
UK Admin. costs	1,240,000	1,460,000	1,606,000	1,766,600	1,854,930	1,947,677	2,045,060	2,147,313	2,254,679	2,367,413
FCF Creditor payments	583,000	583,000	583,000	583,000	583,000	583,000	583,000	583,000	583,000	583,000
Group Operating Cash Flow	-2,428,168	4,709,914	5,914,324	6,824,603	6,574,453	6,481,707	6,384,323	3,162,681	3,055,315	2,942,581
Attributable Group pre-tax Cash Flow	-1,796,844	3,485,337	4,376,600	5,050,206	4,865,095	4,796,463	4,724,399	2,340,384	2,260,933	2,177,510
UK tax @19%	-	-	-	-	-	-	-	-444,672.96	-429,577.34	-413,726.95
Attributable Group post-tax Cash Flow	-1,796,844	3,485,337	4,376,600	5,050,206	4,865,095	4,796,463	4,724,399	1,895,711	1,831,356	1,763,783

Source: TPI

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