Ironveld

Ironveld has announced its signing of a Letter of Intent ('LOI') with BurnStar Technologies (Pty) Limited ('BurnStar'), to proceed towards a binding Legal Agreement under which BurnStar will implement its patent-pending 'Guilt-Free Hydrogen'™ technology to process Liquefied Natural Gas ('LNG') on site at Ironveld's Rustenburg smelter. As part of the Agreement with the Group's wholly-owned subsidiary, Ironveld Energy (Pty) Limited ('Ironveld Energy'), BurnStar will produce hydrogen as a furnace reductant gas to significantly reduce Ironveld's carbon consumption and potentially take the lead in producing premium priced 'green metals' in South Africa. Expected to be formally concluded within two months, while remaining conditional on Ironveld Energy finalising its supply of LNG to the smelter, TPI considers Ironveld could potentially make its first such product sales during Q1 2024.

Having already surmounted all major technical challenges at Rustenburg, with on-site stockpiling of feedstock commencing some weeks back and sale prices guaranteed through existing offtake agreements, overall project risks appear to have reduced substantially. Today's announcement not only further supports expectation that Ironveld will become cash generative within its first full year of production, but also lends further credibility to the Board's ambitious medium to longer-term vision of building a much larger, scaled-up production facility. Having taken today's news on board TPI will not, at this time, be revising its existing prudent financial model for the project, but may look to do so once the plant has been commissioned and its prospective economic benefits formally detailed. In the meantime, based solely on the smelter's first phase of proposed commercial expansion and utilisation only of existing wholly-owned plant, TPI derives a £30.7m DCF valuation for Ironveld, which remains almost two-and-a-half times the Group's post-Placing 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.)

BurnStar Technologies for hydrogen production - Highlights

- BurnStar has a patent-pending protected technology in more than forty-five countries which can produce hydrogen from various hydrocarbons including flare gas, LPG, naphtha and LNG. BurnStar owns and applies the trade name 'Guilt-Free Hydrogen'™;
- BurnStar will supply and install a commercial plant at its own cost at Ironveld's Rustenburg smelter facility;
- Use of hydrogen as a reducing agent within Ironveld's smelting process has the potential to significantly reduce total carbon consumption, reduce production costs, and enable the production of premium priced 'green metals';
- Binding Agreement expected to be signed within two months.

Details of the LOI

The LOI states that Ironveld Energy and BurnStar intend to enter into the

Stock Data

Share Price:	0.40p
Market Cap:	£14.24m
Shares in issue:	3,559.80m
52-week high/low:	0.98p/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% V_2O_5, 68.6% Fe_2O_3 and 14.7% TiO_2.

www.ironveld.com/

5-year share price performance

Source: LSE

Past performance is not an indication of future performance.

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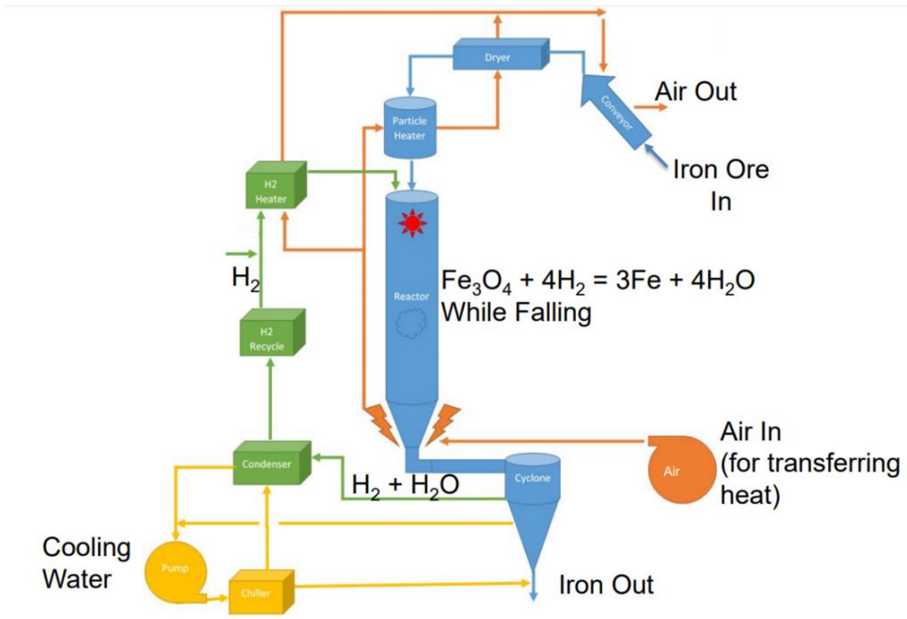
binding Agreement under which BurnStar will supply and install, at its own cost, a plant at Ironveld's Rustenburg smelter capable of producing hydrogen from LNG at the rate of 5 kg per hour. The Agreement will be conditional on Ironveld Energy finalising its supply of LNG to the smelter, negotiations for which are already underway to feed the solar-hybrid power generation plant currently being installed. BurnStar is backed by specialist South African venture capital and incubator fund, Savant.

Ironveld process and 'green metals'

Research continues to be undertaken into the possibilities of using hydrogen as a reducing agent in smelting processes, A reducing agent or 'reductant' is used in the smelting process to change the oxidation state of metal ore (to 'decompose' it), driving off unwanted elements from iron ore (or alternatively in scrap iron/steel) as gasses or slag, leaving the metal base behind. Typically, the reducing agent used is a form of carbon, for example anthracite, which in Ironveld's process is mixed with the magnetite ore inside the furnaces. Recognising the significant environmental benefits this potentially offers, a number of industry players are actively developing processes and technologies to replace carbon-based reductants with hydrogen. The first green steel produced using hydrogen was shipped from Sweden by Hybrit (a joint venture between steelmaker SSAB, Vattenfall and LKAB) in August 2021.

BurnStar has developed a novel and proprietary process with patent applications filed in more than forty-five countries. Its liquid metal bubble column system produces 'turquoise hydrogen*' from various hydrocarbons including flare gas, LPG, naphtha and LNG with the registered trade name of 'Guilt-Free Hydrogen' ™. BurrnStar has successfully completed testing of a pilot plant and has secured all funding to design, build, own and operate a commercial sized unit and to demonstrate production of up to 5 kg of hydrogen per hour. Once the BurnStar plant is established at the Rustenburg smelter, and is producing hydrogen, Ironveld intends to evaluate its use as the reducing agent in its smelting process. The hydrogen will be supplied by BurnStar at costs lower than current market rates. If successfully applied to Ironveld's production, this will enable the Company to significantly reduce its carbon consumption over and above the benefits of the solar-hybrid power plant, due to be commissioned in Q3 2023. This will also reduce overall production costs and potentially produce 'green metals', which command premium pricing in the market. The image below illustrates the use of H_2 to produce steel from iron ore.

Burnstar's Reduction Process of Decarbonisation in the Iron & Steel Industry



Source: Burnstar

**'Turquoise hydrogen' is a generic term for hydrogen in which no greenhouse gas (CO2) is produced or emitted to the atmosphere during the production phase as all the carbon is separated in a solid form and sold as a fertilizer additive.*

TPI's financial model for Ironveld derives a current valuation of £30.7m

Taking into account the Group's available cash resources, including the net proceeds of the £2.0m Placing announced on 23 February 2023 plus anticipated smelter/mining cash flows, Ironveld's Board expects to have sufficient cash resources to fund its operations on an ongoing basis.

Based on the expectation that Ironveld will be able to fulfil the growth strategy as outlined in this report, TPI 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 its successful exploitation of its Rustenburg smelter facility. The financial model (originally detailed in a TPI Research Update published on 23 February 2023)) 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 prudent assumptions covering exchange rates, mining production, smelting output and sale prices in accordance with existing offtake agreements. The Discounted Cash Flow ('DCF') model utilises an 8% discount rate along with a 2% terminal growth rate in order to generate a theoretical £30.7m valuation.

(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.)

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