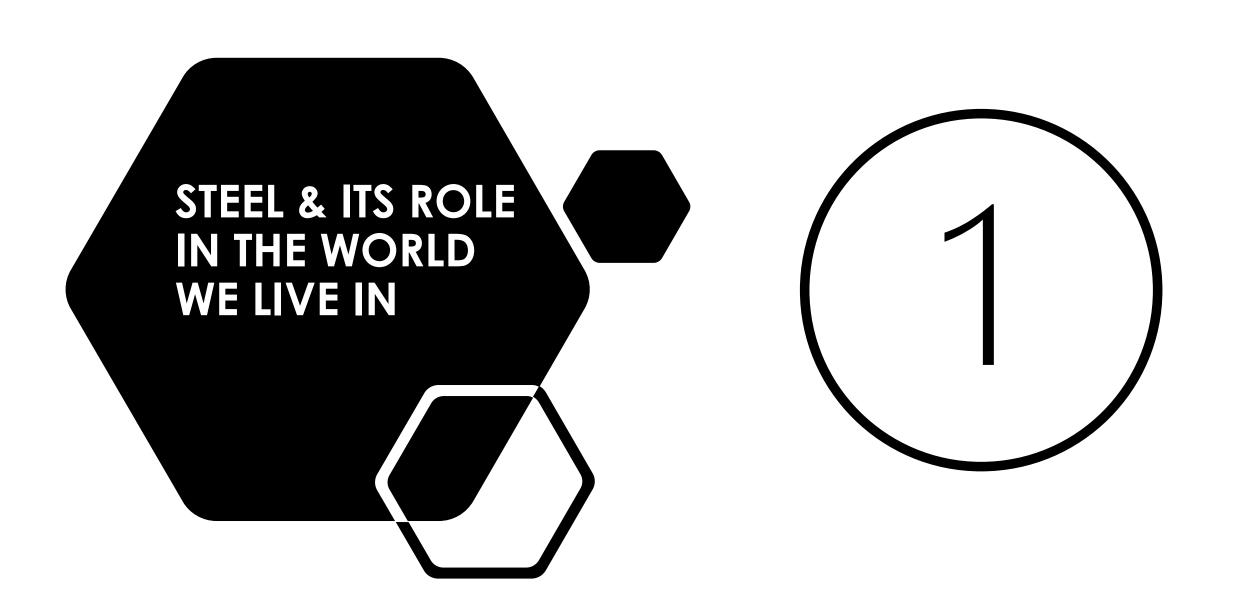




THE CASE FOR A NICHE GREEN STEEL INDUSTRY IN NAMIBIA





HOUSING & CONSTRUCTION



ALL HEAVY MACHINERY & VEHICLES

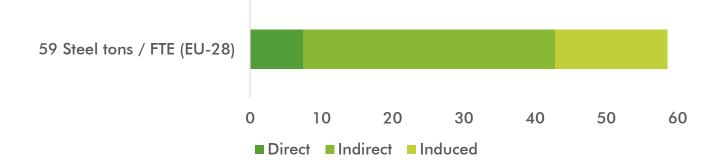


NATIONAL INFRASTRUCTURE



Every G20 nation has steel production capacity and the G7 consider it a strategic and national security sector.







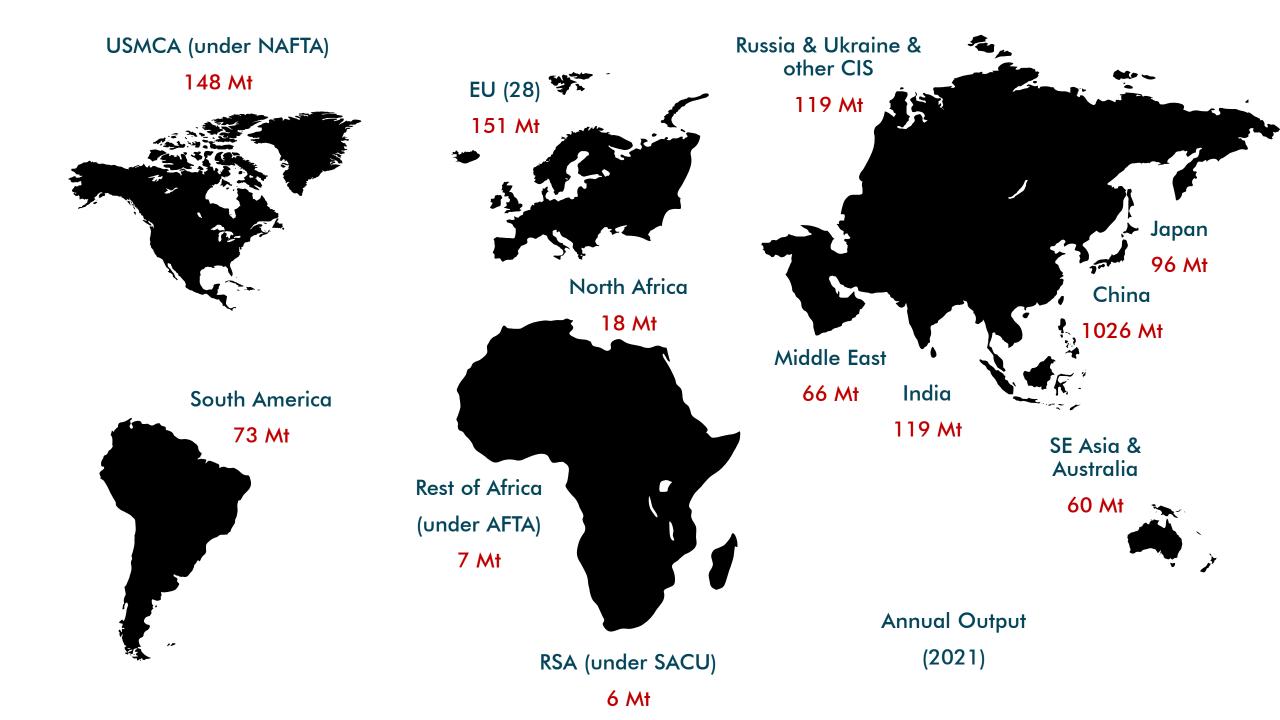
Steel production accounts for up to 10% of an industrialised nations GDP and about 2% of the worldwide GDP.



Should & can Namibia produce steel?

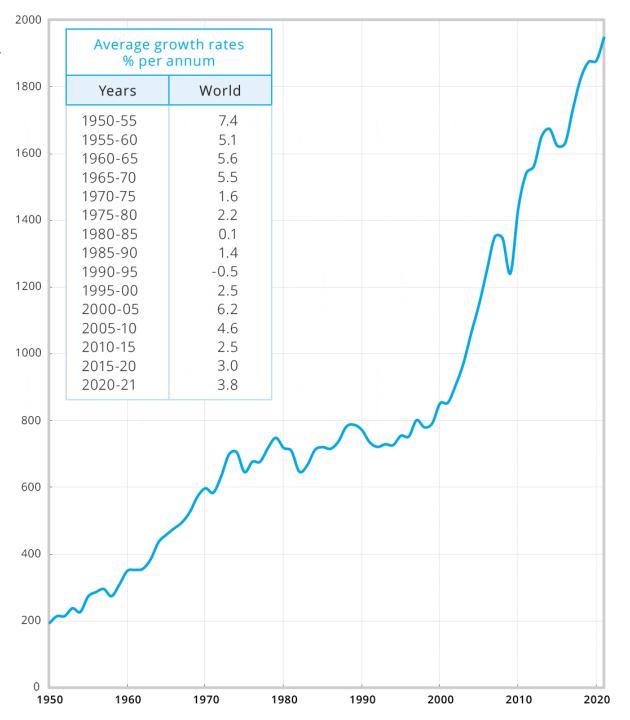
WORLDWIDE STEEL PRODUCTION & TRADE

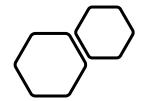




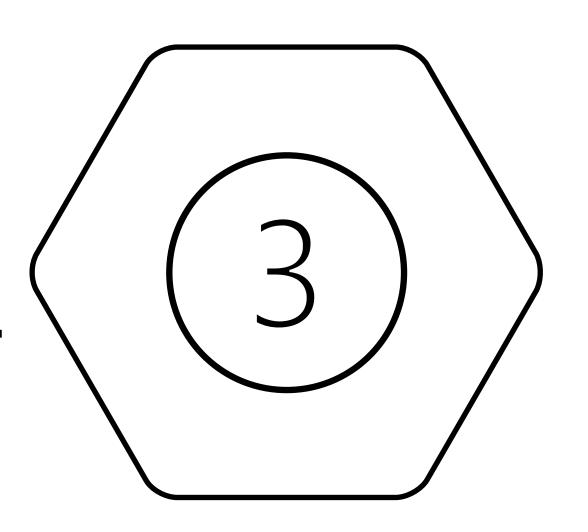
millions of tons of steel produced per year

Consider that every major global event in the past century can be tracked by steel production. As the world develops and grows its built environment, steel is the foundation of this ambition.



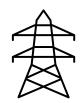


ESTABLISHING A NAMIBIAN STEEL INDUSTRY





A steel plant in Namibia will be based on export only with some minor local products being accommodated in the steel shop.



Access to reliable and low-cost base load power (Ruacana/Omburu). NAMPOWER will have to look at a different cost model to accommodate high demand (>100MW) power customers. Leveraged economic benefit.



Price parity entry into the EU, NAFTA & AFTA to ensure the product can have a terminal market with no volume risk and several offtakers.

NAFTA has >2.5mtpy of HRC imported from Russia & Turkey alone.



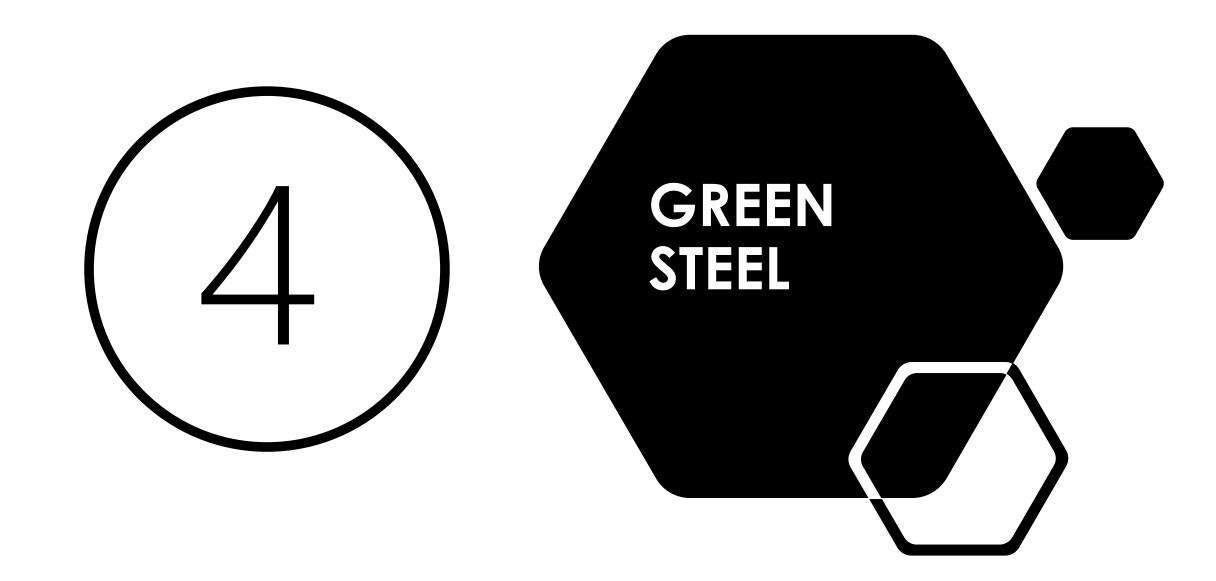
Captive in country iron ore source supplied to the steel mill in the first cost quartile (< 40 USD/t at the 62% Fe index). Lodestone Namibia can supply this for up to 100Mt of 66% Fe DR concentrate or 50 years of steel production.



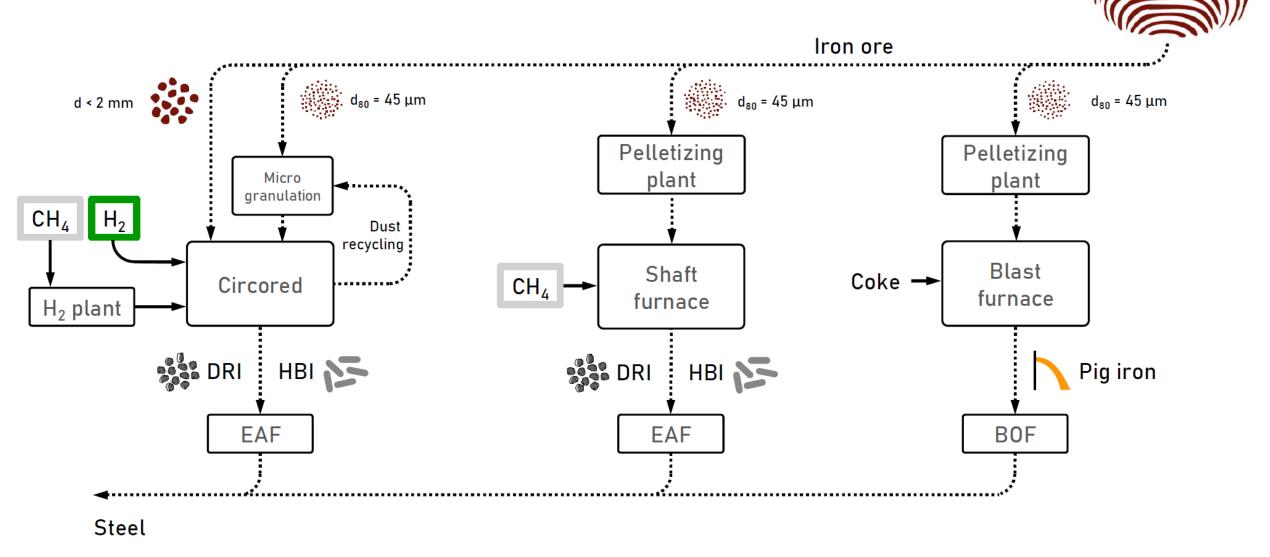
1.50 mio. tons per year of flat products equal, on a per capita basis, the output of Germany and 2/3 that of China.



Full Government support by committing hardship & upside participation commercial models for the state and SOE's – Saldahna Steel's Bane.

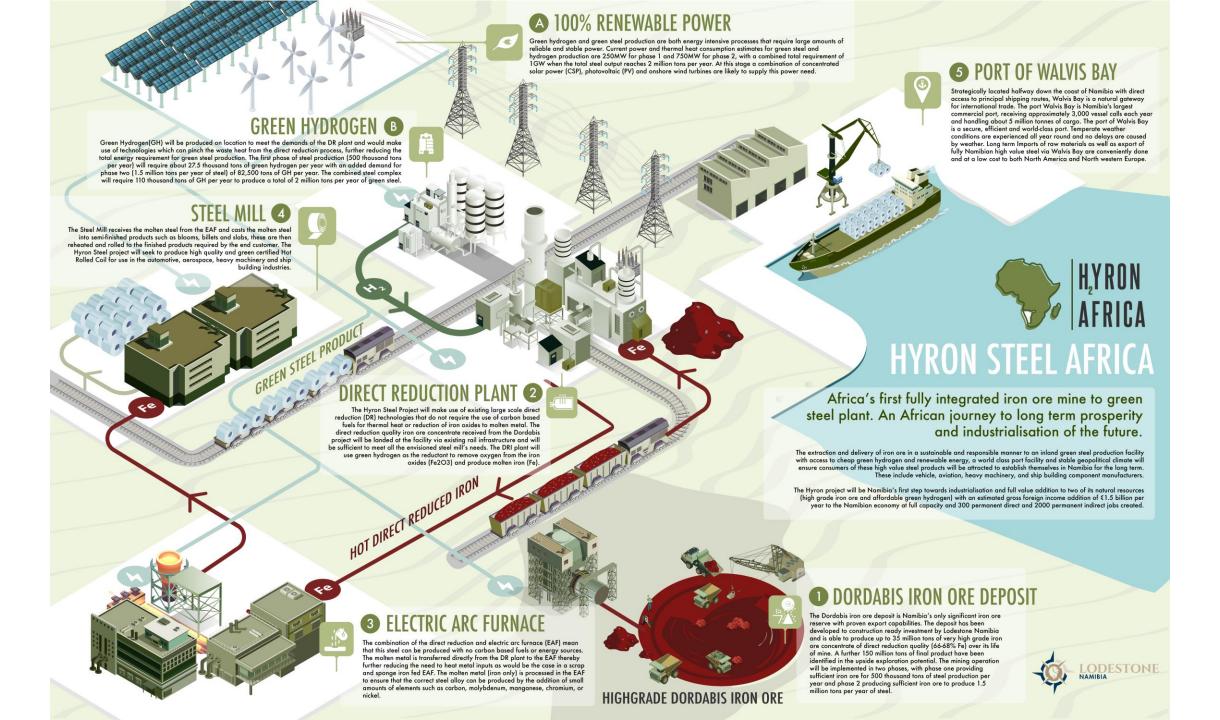


Mine to steel



State of the art Circored +

Mine



Stable baseload power (hydro/Ruacana & solar) blended to 6.75 UScents/kWh 3.1 USD/kg GH



Solar & Wind blend for 50% calendar time blended to 3.5 UScents/kWh

2.1 USD/kg GH



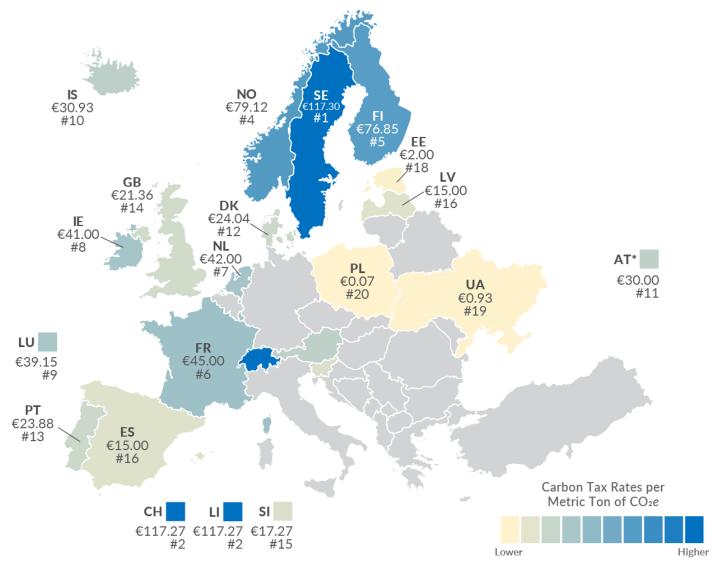
Solar & Wind Blend for 25% calendar time blended to 3.5 UScents/kWh



2.9 USD/kg GH

Carbon Taxes in Europe

Carbon Tax Rates per Metric Ton of CO₂e, as of April 1, 2022



Note: * Austria's carbon tax is due to start July 2022.

The carbon tax rates were converted using the EUR-USD currency conversion rate as of April 1, 2022.

Source: World Bank, "Carbon Pricing Dashboard."



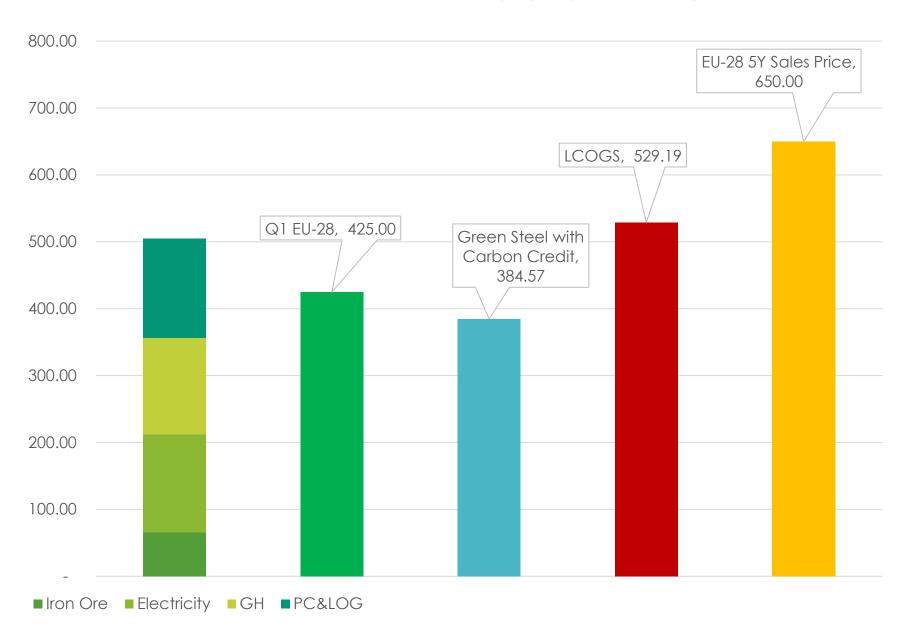
- Steel production accounts for ~9% of worldwide CO₂ emissions.
- Producing one ton of steel produces about
 2 tons of CO₂
- Decarbonising the EU-28 steel industry would require 5 mio. tons of GH on the direct (non scrap charged route) or 100 GW of RE-only electrolyser capacity.
- CO₂ could be as high as 60 USD per ton by 2025. Would we realise those 120 USD/ton as a credit in Namibia by exporting Green Steel to the EU?
- 1.50mtpy Hot Rolled Coil (flat steel product) would require 82.5 thsd. tons of GW or 1.65 GW of electrolyser capacity & only 2% of all HRC produced in the EU.

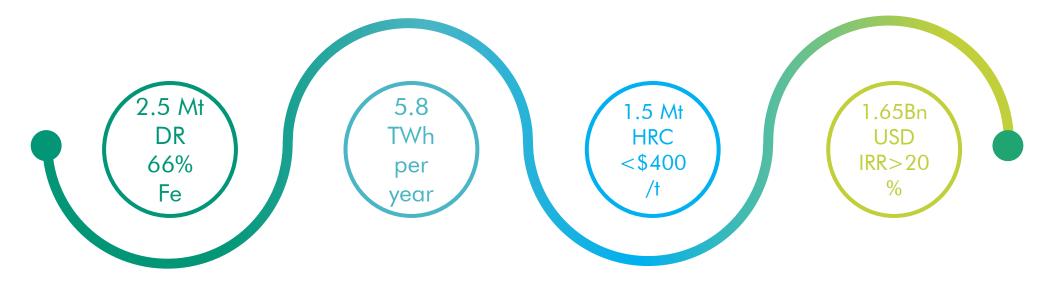
TAX FOUNDATION @TaxFoundation



NAMIBIAN STEEL PRODUCTION COST 1.5 MIO TONS PER YEAR OF HRC

Hyron Steel cost model based on equipment supplier consumptions & benchmark misc. & labor costs in NAFTA & EU; Lodestone IO delivered to Walvis Bay. Hydrogen 2.5 USD/kg.





Lodestone reserves can sustain this for 20+ with the potential for a further 50+ years Renewable energy required to produce GH & Green Steel at 2.5 USD/kg

An integrated DRI, EAF & HRM supplied by leading technology companies.

This scale of capital investment can only be sustained by supranational DFI support & a steel industry participant













ECONOMIC SPIN OFFS FOR NAMIBIA



25,000 long term& FTE jobs created (EU-28 ratio)

- 3,500 Direct
- 15,000 Indirect
- 6,000 Induced



28 Bn (1.65bn USD) direct investment into a national asset that fully utilises Namibian resources



- 1Bn USD per year inflow, or 10% of Namibia's GDP & a fivefold increase from IO sales only
- ½ of that on a balance of trade over the first 5 years



Basis for downstream industry establishment under favorable economic conditions





- Prefeasibility study with a strong focus on the marketing & trade aspect
- Strong offtake partner
 - Strong EU/NAFTA Steel Partner

Conduct the Techno
Economic Feasibility Study
to an investment grade
accepted by
supranational banks &
DFI's

3

Lift off

