Sheet N° 63- 1/2- Production of H2-DRI

Description

Reduced iron ore production unit (DRI), with a production capacity of **1-2 million tonnes**, capitalising on green hydrogen as fuel and reducing agent to serve local and international needs

Main customers : Steel industry, automotive industry

Branch and sub-branch: Energy-intensive upstream industry / Metals

Complexity of the product[1] -3,33 — 2,56 — **- 1,16**

HS Code : 720310

Key facts

- To date, DRI units based mainly on natural gas and coal with the emergence of 100% green hydrogen production as a substitute
- Interesting potential for the Kingdom by capitalising on green hydrogen as a fuel and reducing agent
- Global DRI production dominated ~60% by India and Iran
- Location of the unit in the Region to allow for significant cost competitiveness due to the high green hydrogen potential

Prerequisites (3)

- Securing the supply of raw materials, premium purchase contracts and the need for proximity to a green hydrogen production project
- Need to create a specific training pathway

Market indicators

Target market(s) :

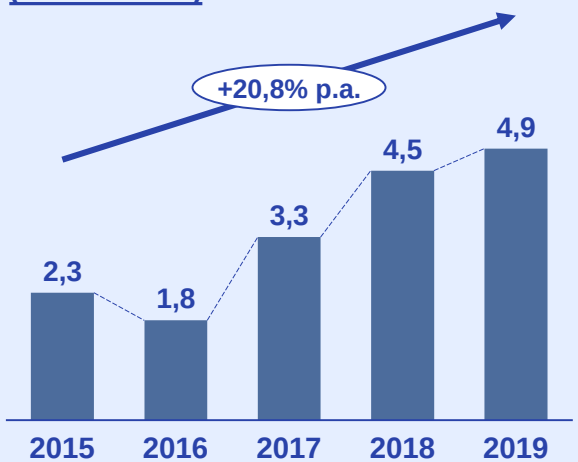
Target market(s), (from highest to lowest priority) **to be addressed :**

\+ Exports: Mainly to Europe (Italy, Germany and Spain), USA and Saudi Arabia

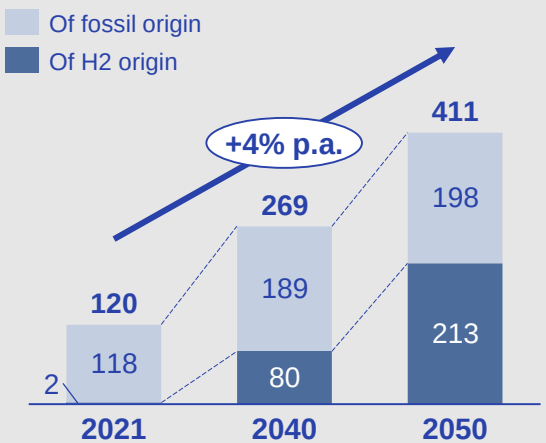
\- National: as a substitute for imports from : United Arab Emirates, Russia and Libya

Market size and development (2)

World imports of DRI (USD billions)



DRI global production projections (MT)



(1) Product Complexity Index: Diversity and sophistication of the know-how required to produce a product. The PCI is calculated according to the number of countries that produce the product and the economic complexity of these countries. The most complex products, those that only a few countries can produce, have the highest PCI (e.g. electronics, chemicals) vs. the least complex products (e.g. raw materials, agricultural products) - Source: TradeMap, Harvard economic complexity

(2) Sources: ITC, IIMA, IEA

Sheet N° 63- 2/2- Production of H2-DRI

Financial indicators (indicative) :

Potential investment	4 billion MAD
Turnover	4 - 5.6 billion MAD
Estimated selling price	5 - 7 MAD / kg
ROI	~4 - 6 years
EBITDA (as % of sales)	13 - 17 %
Jobs	600

Human resources

HR skills needed

- Steel, IMM, foundry, industrial engineering

Training offers

- OFPPT (Laâyoune): Specialised Institute of Applied Technology (ISTA)
- ENSA (Agadir) : Mechanical Engineering
- ENSA (Agadir) : Industrial Engineering

Raw materials and suppliers

Main inputs

- Iron ore DR-pellets
- Green hydrogen

Main suppliers

- Mauritania: Iron ore
- Morocco: green hydrogen

Investment elements

Potential land

Priority provinces

✔ Laayoune ✔ Es Smara ✔ Tarfaya

Type of land

Private domain of the State (e.g. National road Lâayoune - El marsa)

Area

7 ha

Average land price

Unified Regional Investment Commission (CRUI)

Mode of mobilisation

Unified Regional Investment Commission (CRUI)

Main investment benefits

Grant	Investment Charter
Support for training	Association des Sidérurgistes Marocains (ASM), Cluster GreenH2
Other	TAMWILCOM "Green INVEST" programme

Contacts

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Source: Expert interviews