Helios Existence Matters.

COMPANY PRESENTATION

JANUARY 2025

Top Innovator by WORLD ECONOMIC FORUM

Affiliate member of worldsteel ASSOCIATION

Supplier at First Suppliers Hub by First Movers Coalition

ORIGIN

Established in 2018 to produce Oxygen on the Moon

Developing technologies to enable the separation of oxygen from lunar minerals in extreme environments, where zero emissions are not an option but a necessity. Currently backed by DARPA

From the Moon to the Steel Industry

Derived from its space technology, Helios developed a novel process to produce iron from iron ore, requiring less energy and cost while emitting only oxygen

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THE STEEL INDUSTRY

Annually:

- 1.8 billion tons of Steel
- USD 1.6 trillion
- 5% CAGR
- 2.6 Gt CO_2

  (~8%-10% of global GHG emissions)

Image: elements.visualcapitalist.com

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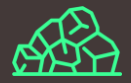
THE STEEL INDUSTRY PREDICAMENT

Current steel manufacturing prefers high grade ore (>60% iron)

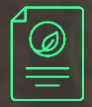
For future green technologies, high grade ore is a requirement



There are no high-grade ores naturally left on earth

Currently, there are no ready to deploy green solutions at scale

The world demand steel makers to stop polluting



All future green solutions erodes the steel manufactures profit margins

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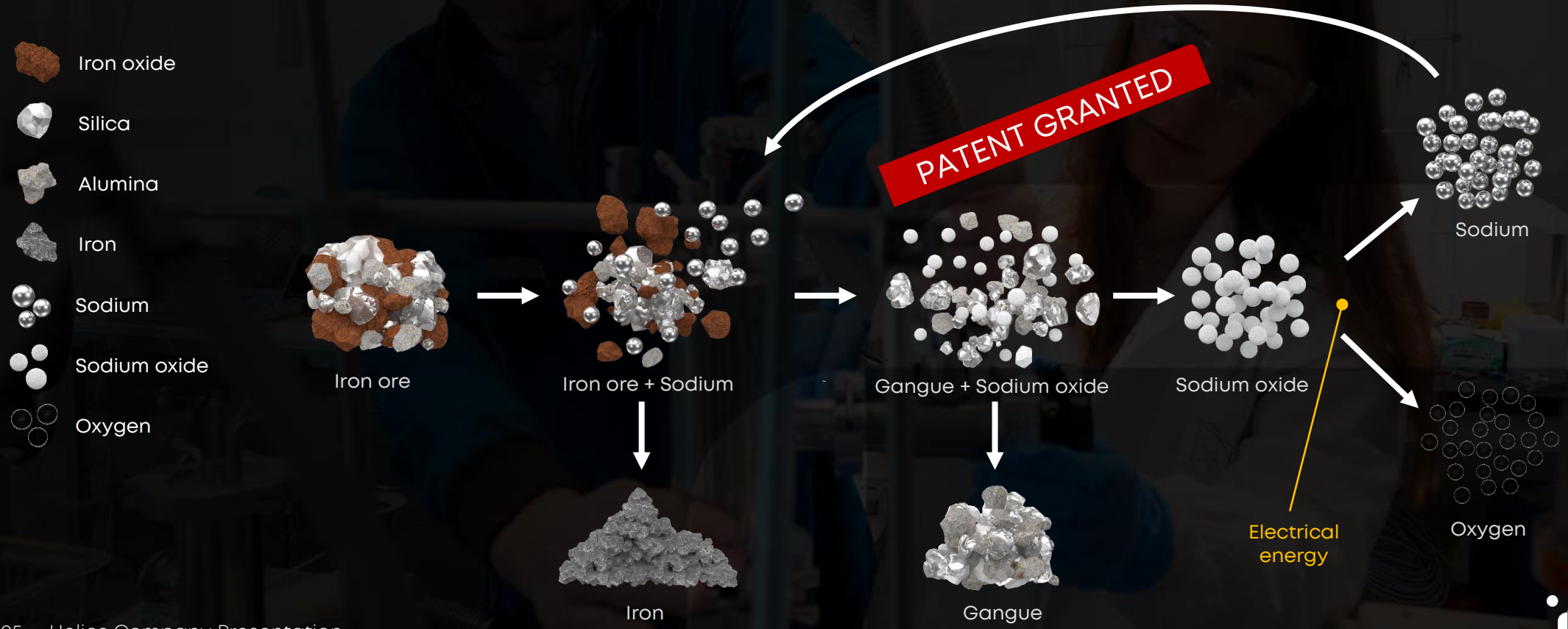
what we do

THE HELIOS CYCLE ™

About the Helios Cycle

- Using sodium as a reducing agent, replacing coal or hydrogen
- Can process low grade ore (starting from 20% Fe)
- Energy required - 3.6MWh-4MWh per ton (at 250°C to 350°C)
- Applicable to other transition metals (e.g., copper, nickel, cobalt and more)



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THE PRODUCT

HGI

Helios Green Iron™

Briquetted iron, fully compatible to EAF and BF-BOF

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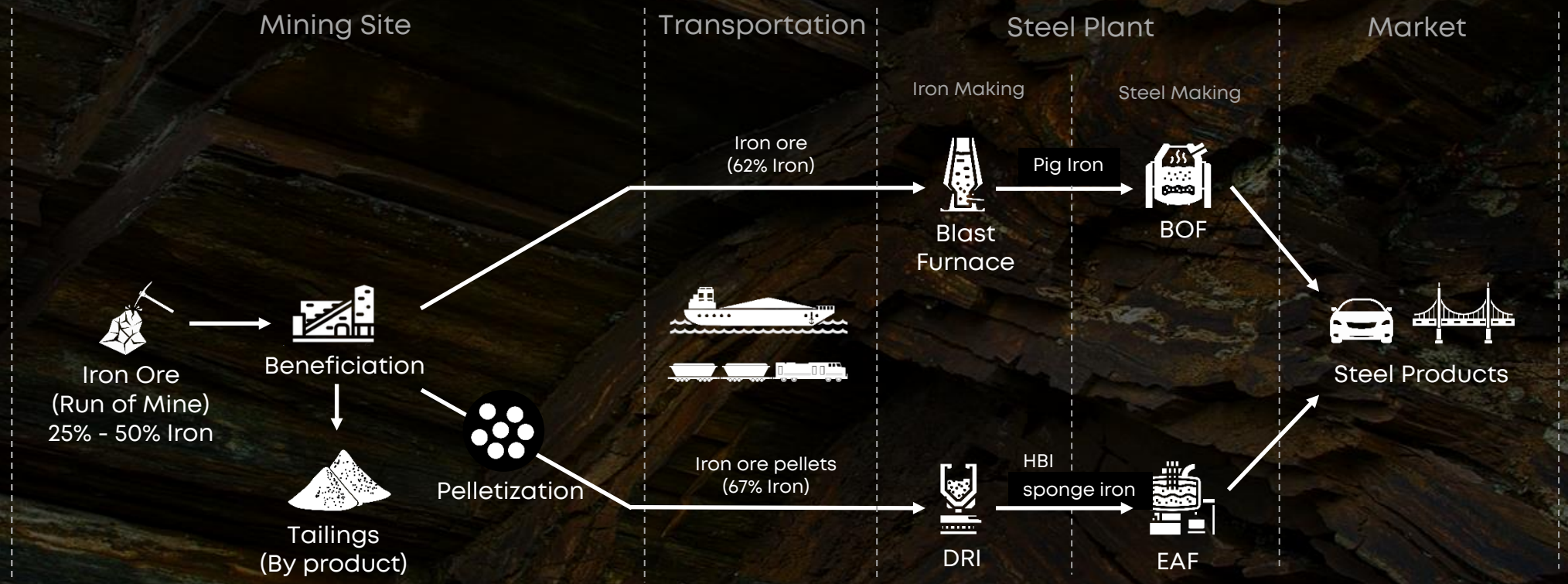
STEEL PRODUCTION FLOW



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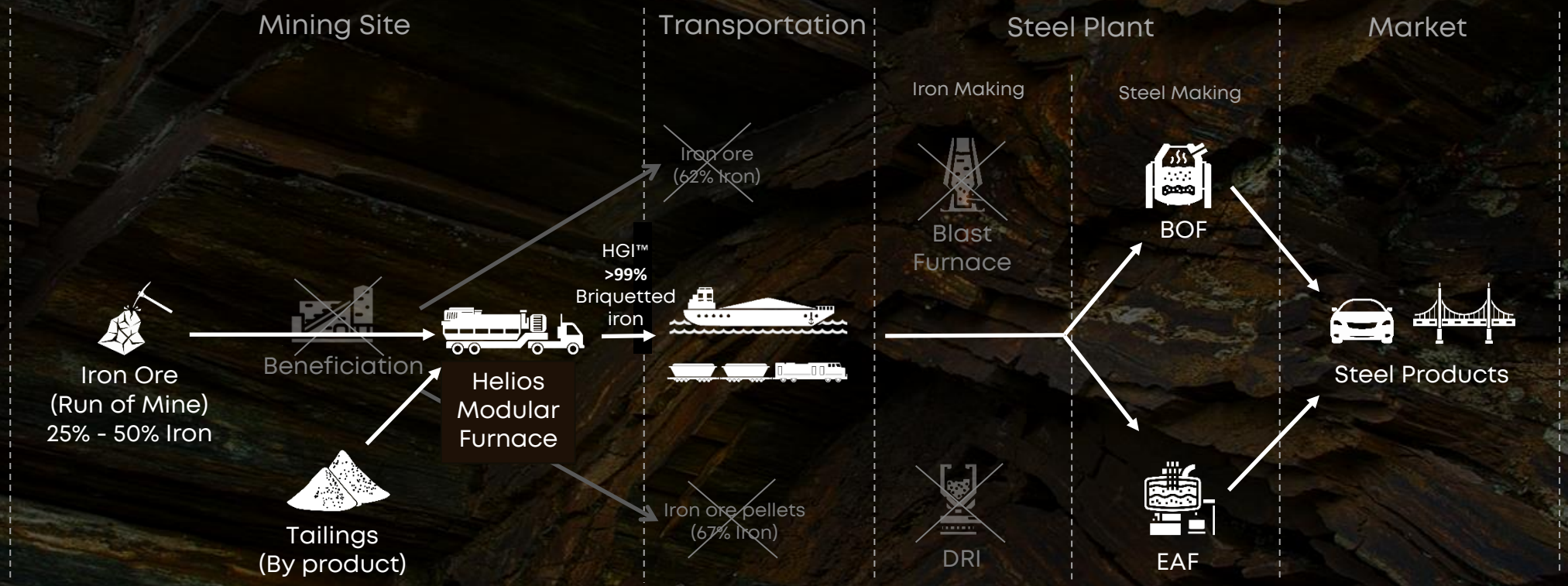
STEEL PRODUCTION FLOW WITH HELIOS CYCLE™



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TECHNOLOGICAL ADVANTAGES

Solves the low-grade ore problem

The Helios Cycle™ can be used with low-grade ores (20% Fe) and **tailings** which today are mostly unusable. This opens the market to cheaper ore which in turn reduces further the final cost of the iron that is being produced

No hydrogen

Using hydrogen requires special infrastructure to be built near the plant. The production of green hydrogen dramatically increases the cost of steelmaking

No direct carbon emissions

The Helios Cycle ™ emits only oxygen as a byproduct. If a renewable energy source is used, the whole process is 100% carbon emissions-free

Lower energy consumption

Current iron production methods are conducted at 1200°C to 2000°C. The Helios Cycle ™ is conducted between 250°C to 350°C

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COMMERCIAL ADVANTAGES

Modular furnaces

The Helios Cycle's fast kinetics allow for high production capacity in a smaller volume. This enables faster market penetration, using small and mobile furnaces

Proximity to mining sites

The mobile modular furnace approach allows for production near mines, so outgoing shipments are iron (vs. iron ore). This cuts shipping costs and emissions

Lower operational cost

Stronger unit economics due to overall lower energy consumption and lower ore grade requirements → less operational expenditure per ton of iron produced

Safer than existing processes

The Helios cycle™ is safer than traditional methods that use hazardous carbon monoxide or hydrogen. Sodium as a reducing agent, is easier to handle and, despite its reactivity, reduces risks of fire, explosion, and toxic exposure, ensuring a safer production process

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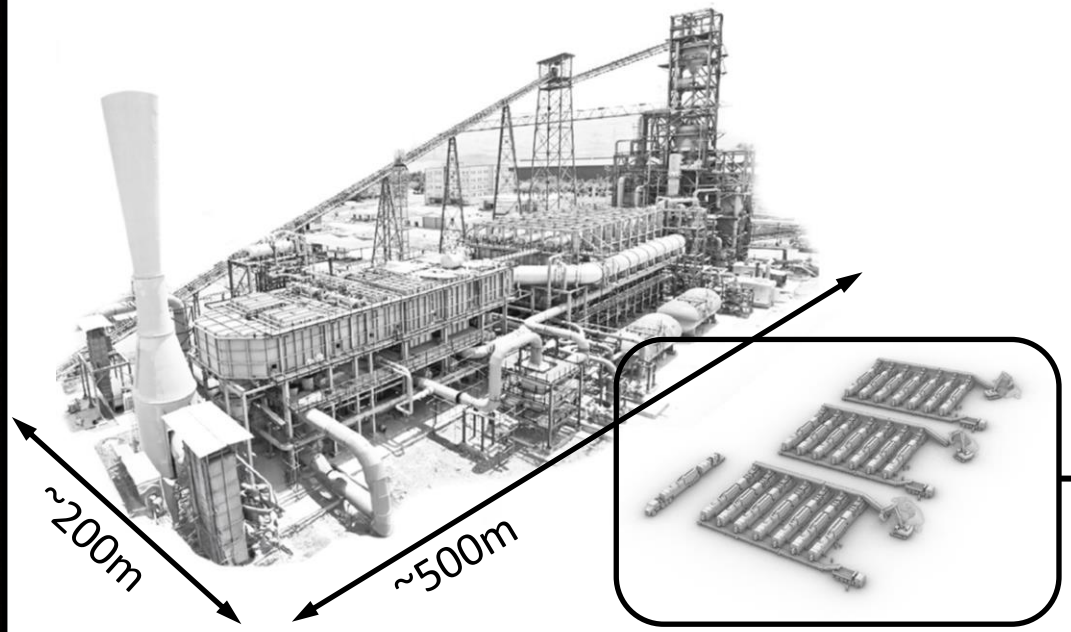
DRI Vs. MODULAR FURNACES

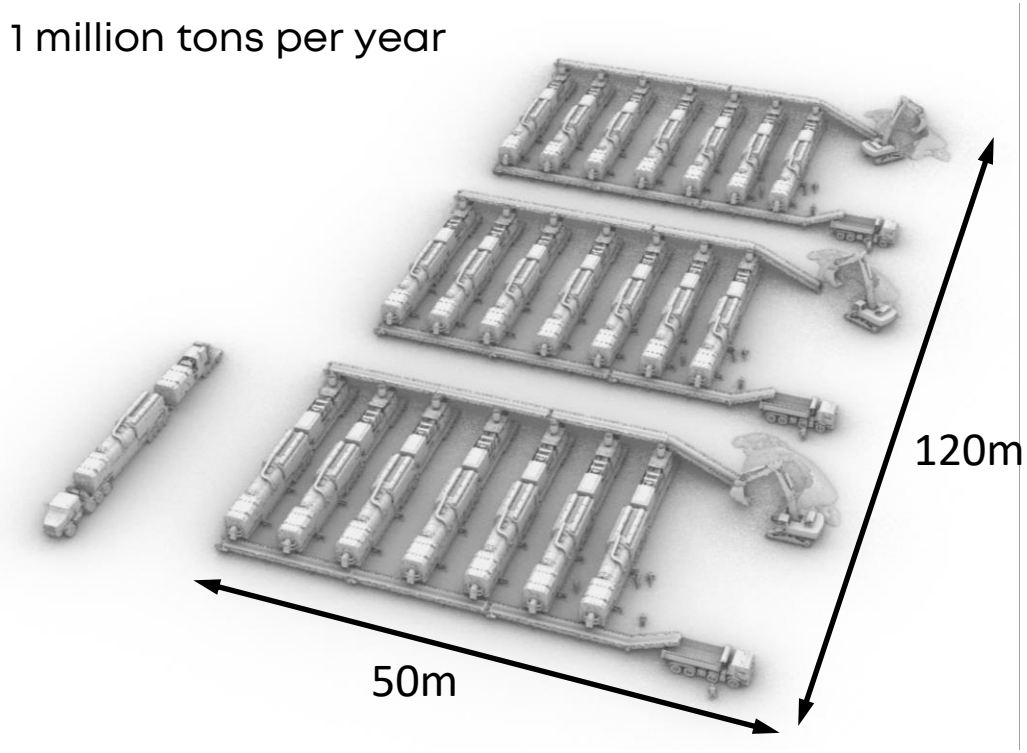
DRI Plant

1 million tons per year



20 modular furnaces

1 million tons per year



- **Fast installation: modular installation Vs. 5-7 year with engineering company**
- **Lower capex: $20M per modular furnace Vs. ~$1.5B per DRI**

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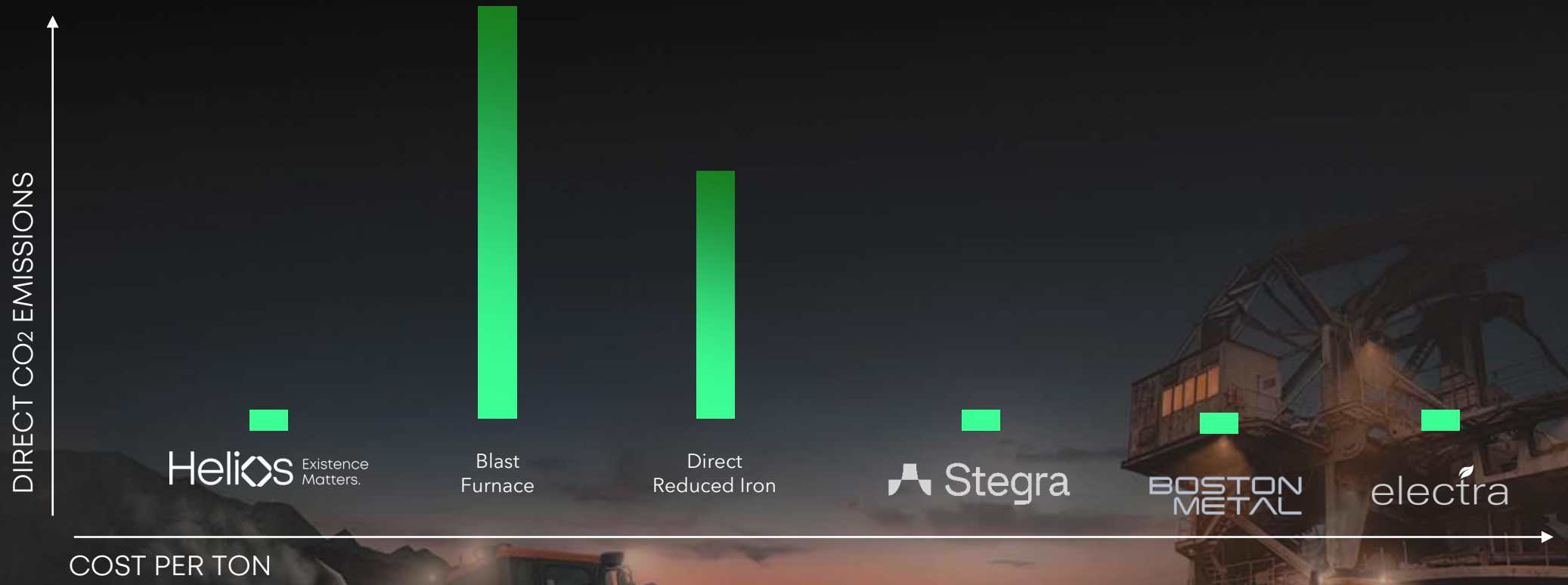
TECHNOLOGY LANDSCAPE



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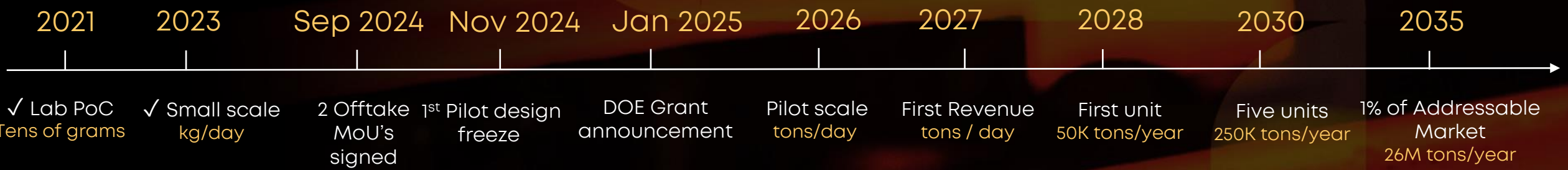
ROADMAP



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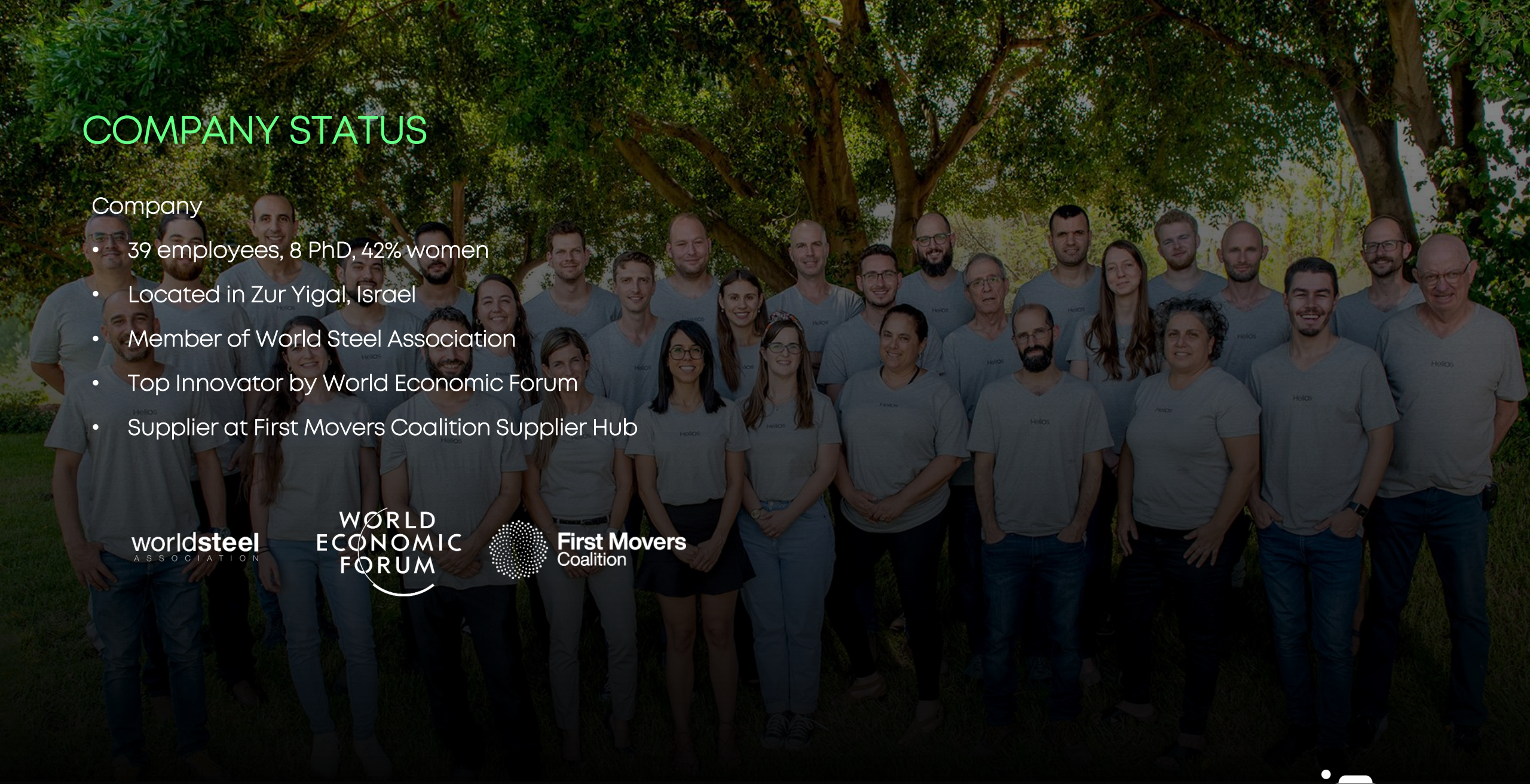
COMPANY STATUS

Company

- 39 employees, 8 PhD, 42% women
- Located in Zur Yigal, Israel
- Member of World Steel Association
- Top Innovator by World Economic Forum
- Supplier at First Movers Coalition Supplier Hub



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LEADERSHIP

Jonathan Geifman
CEO

Bat-Chen Herchkovich
CBO

Ohad Hallak
CFO/COO

Dr. Linoam Eliad
CTO

Dr. Yossef Gofer
Chief Scientist

Dr. Hani Faran
VP R&D

Inbal Shenfeld
Chief of Staff

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ADVISORY BOARD

Sir Mick Davis
Business Strategy
Government Relations

Former CEO at Xstrata (today's Glencore)

Sunny Shah
Financial Strategy

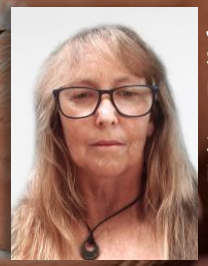
Former head of Mining and Metals EMEA at Goldman Sachs

William Larson
Space Resources

Former head of In-Situ Resource Utilization at NASA

Kelsey Ocasio-Christian
Business Strategy

20 years experience in strategic consulting

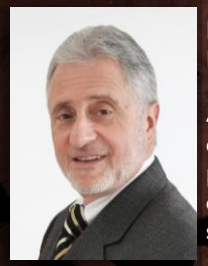


Jill Cooper
Steelmaking and refractories

35 years experience in steelmaking

Dr. Howard Pielet
Ironmaking

57 years experience at ArcelorMittal



Barry Perlmutter
Process scaleup

40 years experience in process scale up and materials separation

Dr. James Lattner
Process scaleup

Former Chief Engineer at ExxonMobil Chemicals

Joseph Morey
Techno-Economic Analysis

Former Corporate GHG Tactical Reduction Lead at US Steel

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THANK YOU.
YOUR ATTENTION MATTERS