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Decarbonizing Existing Infrastructure and Processes

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Utility Global CEO and President

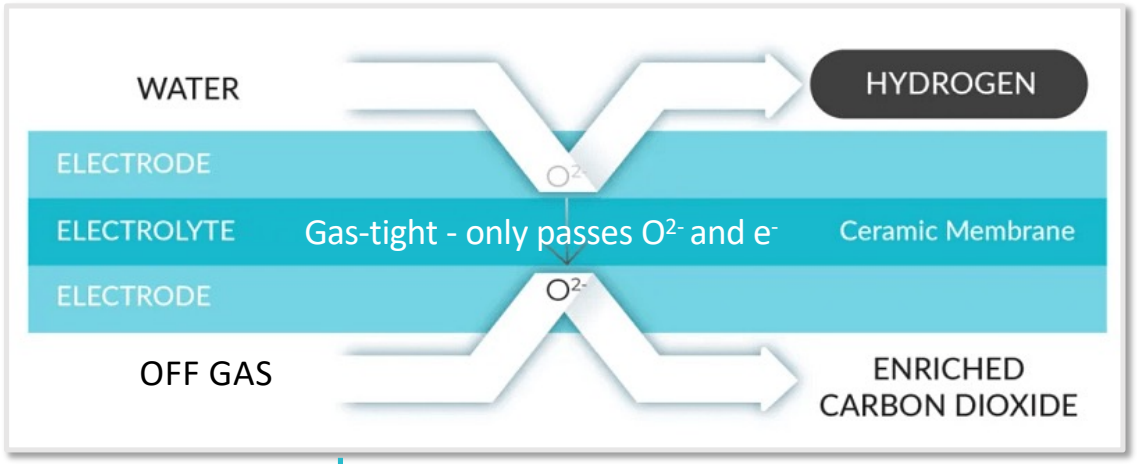
Boston

eXERO – electrolysis without electricity

Elegant single electrochemical reactor design with “built-in” product separation

Standard solid oxide materials in proprietary combination

Inert gases do not need to be removed upfront



Pure water feed results in pure steady state hydrogen

Concentrated CO2 more cheaply captured from single source

Extensive electrical infrastructure, footprint, cost, and intermittency eliminated

Reaction driven by the overpotential existing between different gas species on opposite sides of the electrolyte – Nernst Equation (1887) (https://en.wikipedia.org/wiki/Nernst_equation)

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Electrolysis

eXERO

Gas Processing

combines the best of both

Elegant and competitive solution

- No need to remove inerts
- Minimal to no H2 purification
- Eliminates electrical infrastructure
- Scales from 1 tpd to “500” tpd
- Low pressure capability ideal for waste gas consumption
- No rare or precious metals

Superior, highly flexible operation

- Rapid load following ideal for variable off-gas feed
- Hot restarts from within minutes
- Long run-times between major relifes as more durable than traditional electrolysis cell-blocks

Attractive integration with existing processes

- Energy self-sufficient with no waste heat while offering energy integration opportunities
- Small footprint as high energy density and no electricals
- Highly modular factory manufactured transportable reactor encompasses majority of plant scope

>50 tpd H2 : $1 – 2/kg | 1 – 10 tpd H2 : $2 – 4/kg

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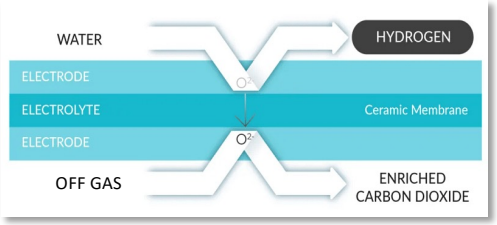
eXERO technology platform with multiple use cases

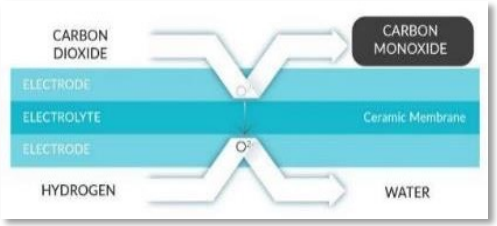
H2gen™



- Hydrocarbon-based waste gases and water react to form concentrated H_2 and enriched CO_2
- Validated in **pilot** and **field demo**
- **Next: Development & deployment of commercial reactor in 1 -3tpd H2 range**

- Off-gas to H2

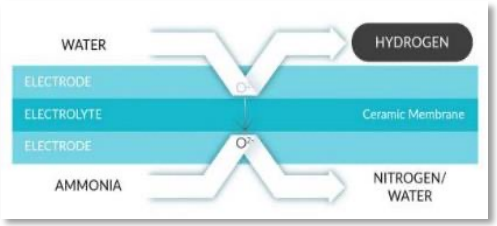
CO-Gen™



- Efficiently **converts vented CO_2 into syngas** to produce sustainable chemicals and fuels
- Extensively validated in **lab**,
- **Next: Piloted as part of commercial reactor development; small commercial demo oppt.**

- Circular carbon
- Renewable fuels
- Green chemicals

Ammonia (AM2H2™)



- **Converts ammonia into pure H_2** in a single process step
- Concept shown in **lab**
- **Next: Lab validation with targeted material set, seek partner to pilot/demo/commercialize**

- Low carbon ammonia supply chain

Protected by 25 patents, many more pending & deep know-how trade secrets

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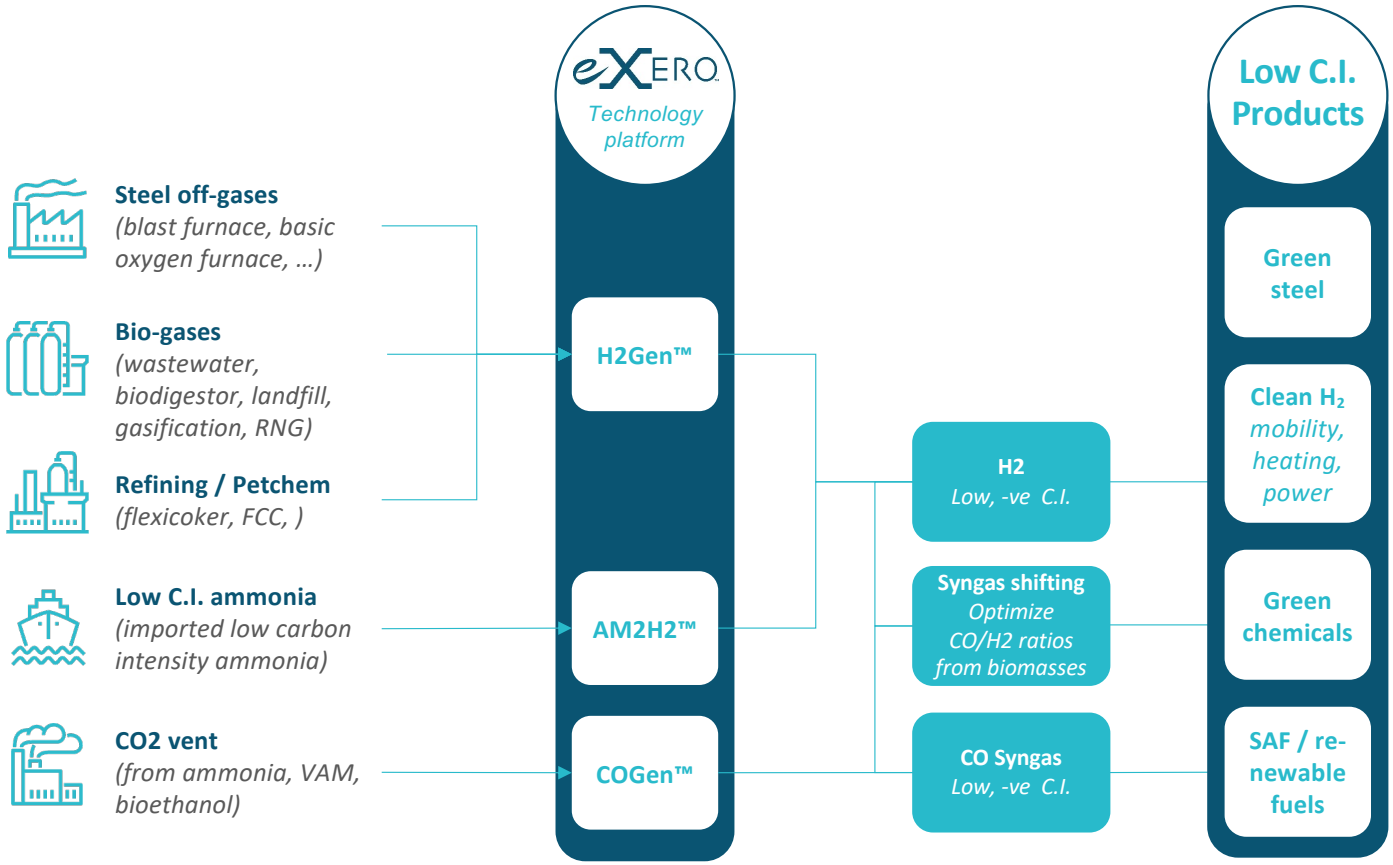
eXERO - decarbonizing existing infrastructure - ~$700B TAM

Unlocks multiple pathways, lowering carbon intensity of high emission industries



- eXERO™ decarbonizes hard to decarbonize industries through multiple pathways
- Converts challenging off-gases into high value low carbon intensity energy / feedstock
- Connects different industries to achieve mutual decarbonization benefits

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H2Gen™ transitioning to commercial scale-up

Field demo moving into first commercial development

Pilot Plant

2022 | Proven Technology

- Successfully proven at pre-commercial scale
- 1,000 x scale up from lab
- ~4,000 hours of runtime
- Hot restarts in <45 min
- No material degradation

Complete

Field Demo

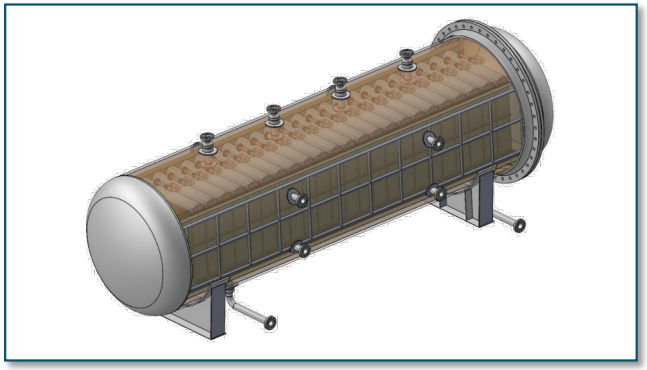
Q4 2023 | Steel Application

- Producing H_2 directly from blast furnace gas in single eXERO™ reactor step
- Performance above expectations
- Optimizing operational integration

Wrapping up

Commercial

2024 - 2027



- First deployment expected @ 1 – 3 tpd H_2
- Stepping-stone to larger facilities
- Standard modularized reactor for all applications
- Deep commercial pipeline across steel, biogas, chemicals, refining, ammonia, mobility
- Increasingly advanced commercial discussions globally

Designing

Expect 1st deployment in 1 – 3 tpd range

Objectives & Achievements

- Demonstrate direct conversion of steel gases into H2 using the eXERO™ technology
- Develop a detailed data map to complement existing lab and pilot data
- Gain operational experience in directly coupling with a steel process

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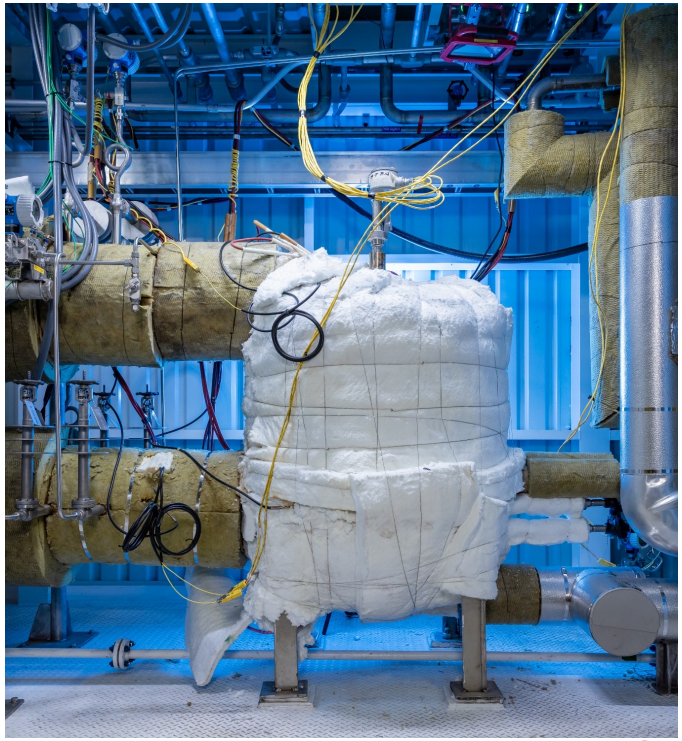
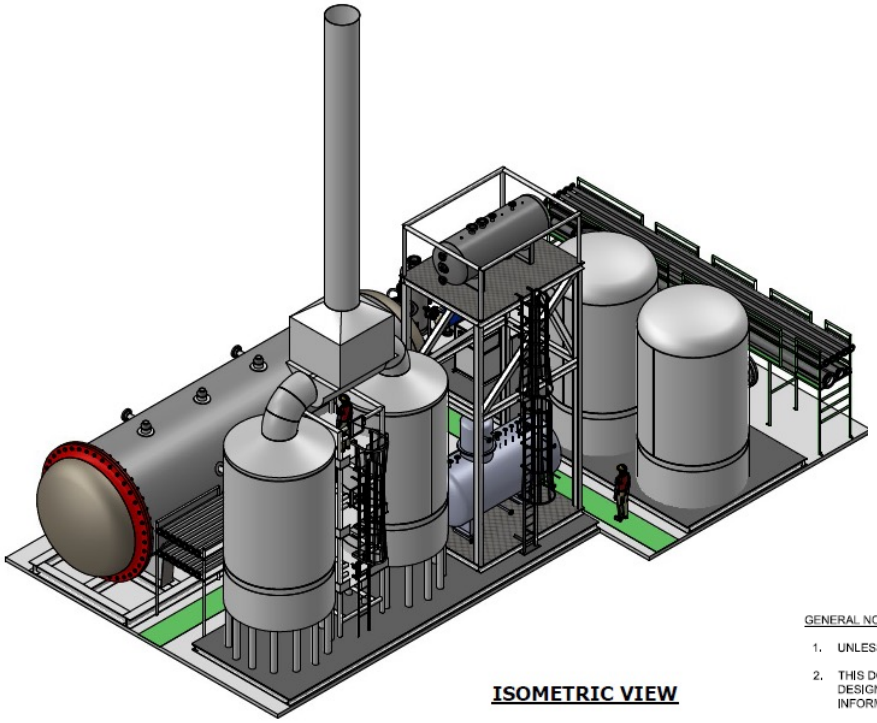
Key Achievements

- >2,500hrs producing H2 directly from blast furnace gas
- Many specialist tests successfully completed
- ~20 blast furnace gas interruptions, switching into standby and back online in minutes

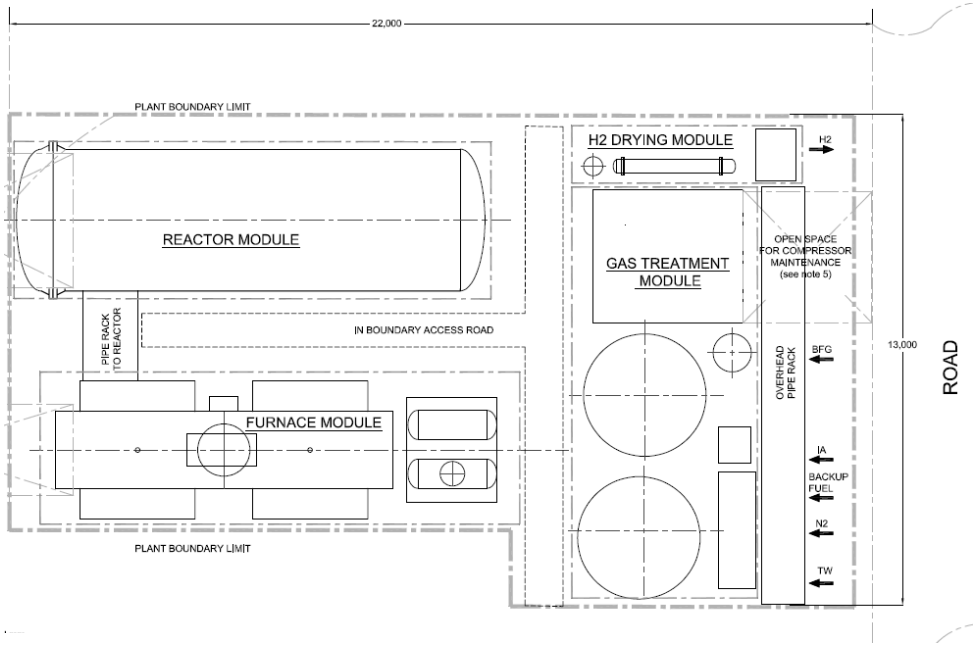


Plot plan for single reactor plant

1.5 TPD plot plan for project currently developing

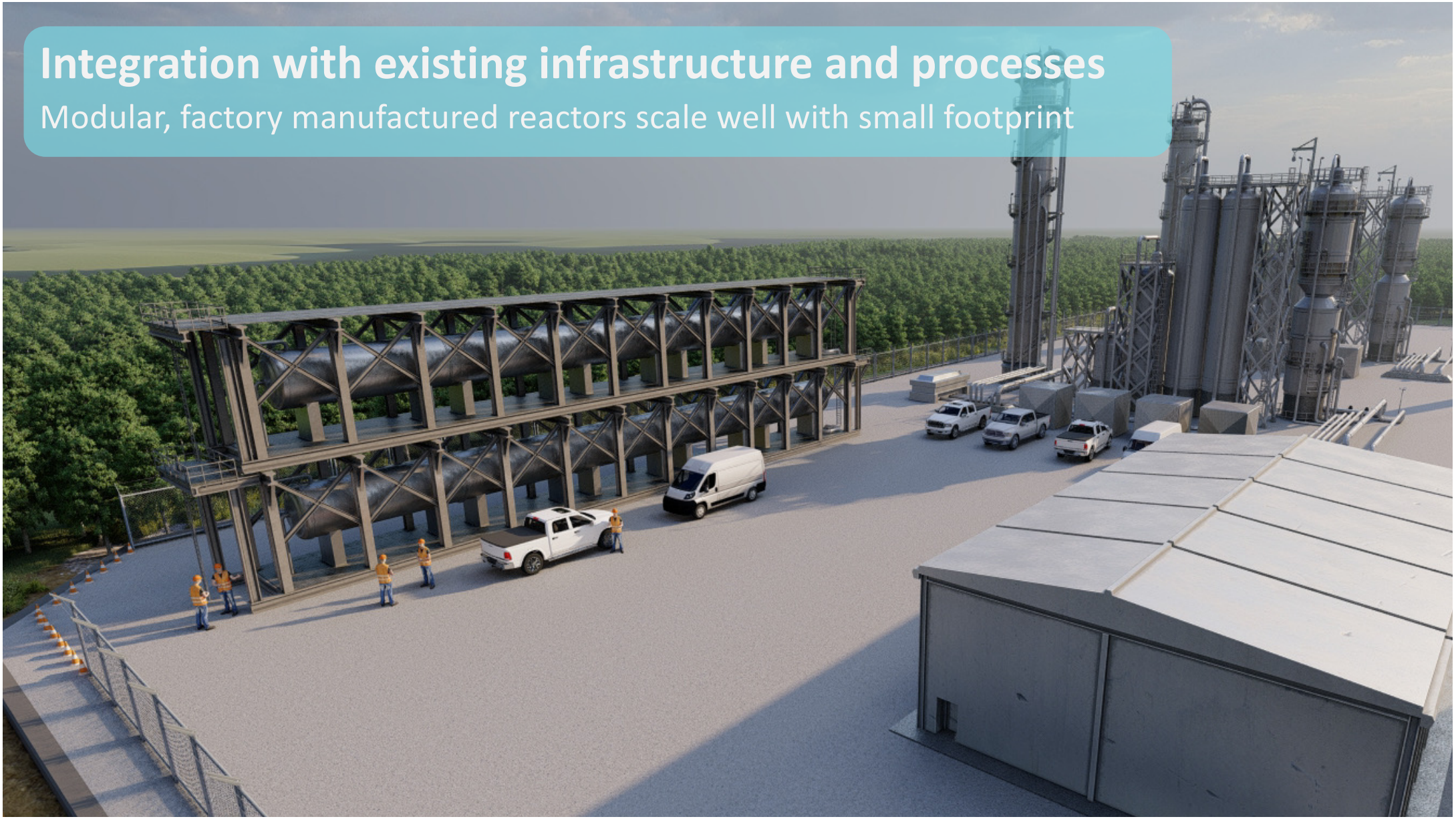


ISOMETRIC VIEW



GENERAL NOTE:

1. UNLESS OTHERWISE NOTED, ALL UNIT SHOWN ARE IN mm.
2. THIS DOCUMENT IS A PRELIMINARY AND SHOULD NOT BE USED FOR ENGINEERING DESIGN. DIMENSIONS AND ORIENTATION ARE SUBJECT TO CHANGE WITH NEW INFORMATION.
3. THIS PLOT PLAN ONLY INCLUDES MAIN PAD EQUIPMENT AND DOES NOT INCLUDE FUNCTIONS SUCH AS A CONTROL ROOM, WAREHOUSE, ENGINEERING OFFICES, ETC.
4. THIS PLOT PLAN ASSUMES THE CLIENT SITE WILL PROVIDE UTILITIES SUCH AS POWER, TREATED WATER, COOLING WATER, INSTRUMENT AIR, AND NITROGEN.
5. CERTAIN MARKED AREAS OUTSIDE THE DIMENSIONS OF THE PLOT PLAN WILL BE TEMPORARILY REQUIRED DURING COMMISSIONING AND MAINTENANCE OPERATIONS. THOSE AREAS WILL BE CLEARED ONCE MAINTENANCE ACTIVITIES HAVE BEEN COMPLETED.


Integration with existing infrastructure and processes
Modular, factory manufactured reactors scale well with small footprint

Company Overview

Overview

Sector	**Off-Gas-to-Value**
Size	**~45 employees**
Locations	Houston, Denver Korea, Japan: Sales offices
Incorporated	2019

Investors

- **>$80MM invested**
- Key stakeholder
  - Ara Partners
- Other investors
  - SAMSUNG ENGINEERING
  - SAINT-GOBAIN
  - aramco

Key markets

- Steel
- Biogas
- Mobility
- Chemicals
- Liquid Fuels

Commercialization progress

- **Field demo producing H_2 from blast furnace in single reactor**
  Successful pilot plant program with >4,000 hr runtime
- Multiple LOIs paving path towards commercial agreements
- **Extensive global opportunity pipeline across sectors**
- Strong IP position with 25 patents (+20 pending); significant body of trade secrets

Technology

eXERO™

Pronounced "e-zero"
E lectroless **X** Coupled **E** xchange **R** eduction **O** xidation

- Leading application flexibly processes dilute, variable waste-gases into **high-purity H_2**
- Combines advantages of chemical and electrolytic processing
- Proprietary to Utility Global

Zero Electricity
Electrolysis without electricity

~70% Reduction
in CO_2 emissions compared to traditional steelmaking

~40% Lower Cost
compared to alternative technologies like H_2 DRI-EAF

Key People


Claus Nussgruber
President and CEO


Greg Heinlein
CFO


Vladimir Novak
CCO


Stefan Reinartz
CTO


Nigel McMullen
COO


Kelly Goranson
VP of People

UTILITY

Why Invest in Utility Global

Differentiated technology provides $700B TAM

1 *Key Investment Features*

- >$700Bn TAM across diverse markets and geographies
- Solves compelling problems – clean H_2 production and concentrating industrial CO_2 for cost-effective sequestration
- ~20 active project engagements with blue chip partners, underpinned by a robust pipeline
- Profitably decarbonizes existing industries and provides option value with technology platform (H2Gen™, CO-Gen™, AM2H2™)
- No renewable power or exotic materials required, resulting in 40% – 50% cost savings over electrolysis
- Lowest total cost of ownership with high standardization, easy to scale up and down

2 *Business Model with Great Upside for Infrastructure Investments*

- Establish early revenue with 20 – 30 small-scale unit sales, while bringing down the cost of manufacturing and supply chain
- Larger facilities benefit from cost reductions of smaller systems, while being prime infrastructure investments with build, own, operate
- Will maximize returns by flexing to most attractive opportunities in a hybrid go-to-market strategy

3 *Thoughtful Business Plan*

- Near-term, finalize 3 – 5 commercial contracts, develop next reactor design to deliver first commercial system
- Minimize cash burn with funded partnerships and rapid, parallel system developments
- Utilize multi-physics modeling for reactor design and conversion optimization

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Thank You

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