

Green  
Energy  
Park

# Green Energy Park

Decarbonization Partner to Global Industry



# Green Energy Park | Group

## Group Activities and References:

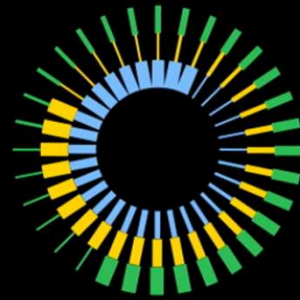
- Over +40 years in Energy Infrastructure and LNG Terminals EPC
- Over +20 years of leadership in Renewable Hydrogen
- Reference projects in 39 countries



# Reference Projects

Reference projects in [Annex](#)





Making the Hydrogen Economy a reality



# Executive Board

Reference projects  
in [Annex](#)

## Implementing the energy transition



### CEO Bart Biebuyck

Founder of Hybart,  
R&I and institutional

Former Executive Director of  
the Clean Hydrogen Partnership  
of the European Commission

Invented EU Hydrogen Valleys  
and Hydrogen Bank concept



### CTO Tobias Puklavec

Owner of Gasfin Group  
Co-owner TGE Gas Engineering  
(350 people)

One of the world's leading EPC  
contractors for ammonia  
terminals and LNG  
infrastructure



### COO Mindaugas Zakaras

Founder of MT Group  
Founder of Nord Steel  
CEO Zakaras Holding  
(350 people combined))

EPC for on/off-shore pipelines,  
gas terminals, and port  
infrastructures



### CFO Mario Reinisch

Founder of EXOGEN Hydrogen  
Solutions

Co-founder of Park Lane  
Advisory

M&A advisory, Morgan Stanley  
New York

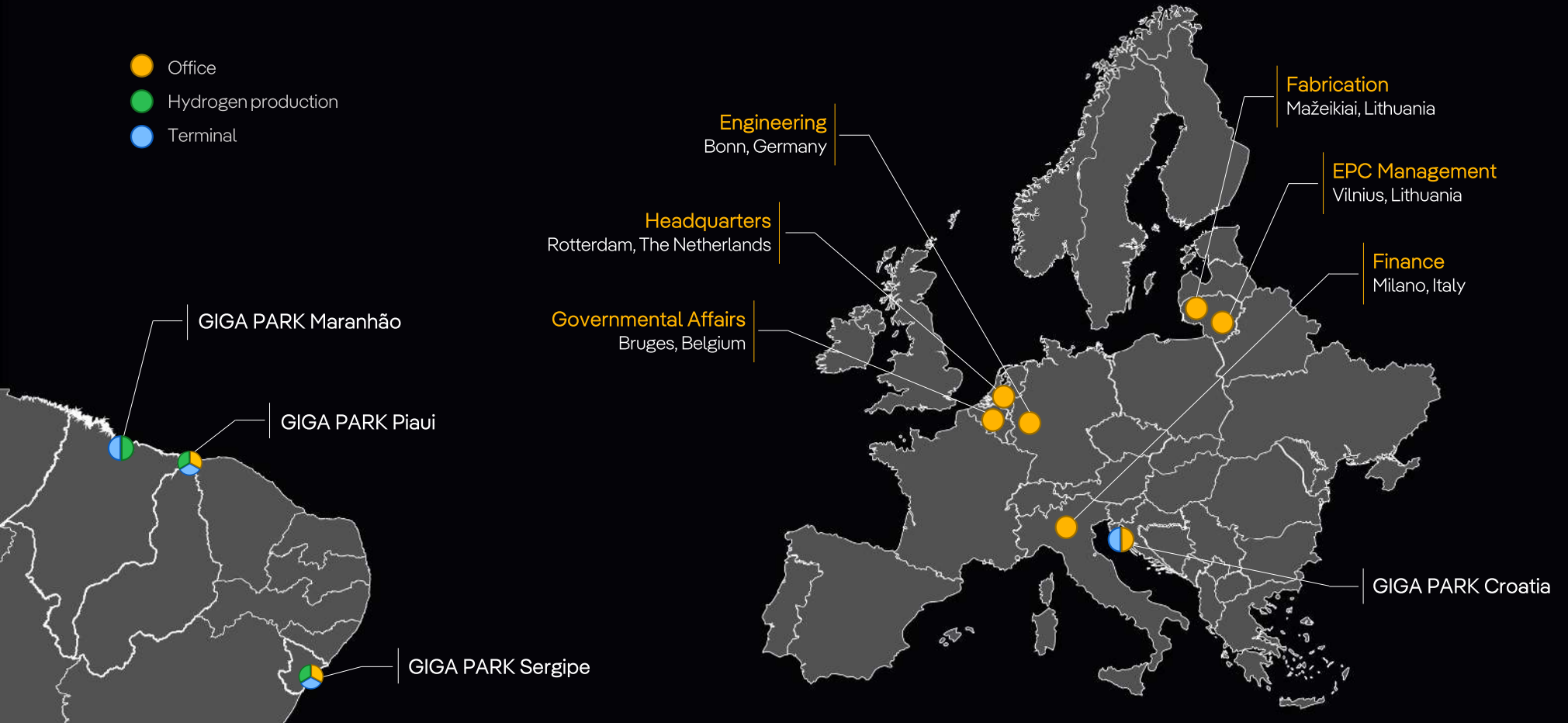
Morgan Stanley

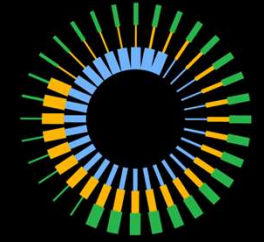




# International Presence

- Office
- Hydrogen production
- Terminal





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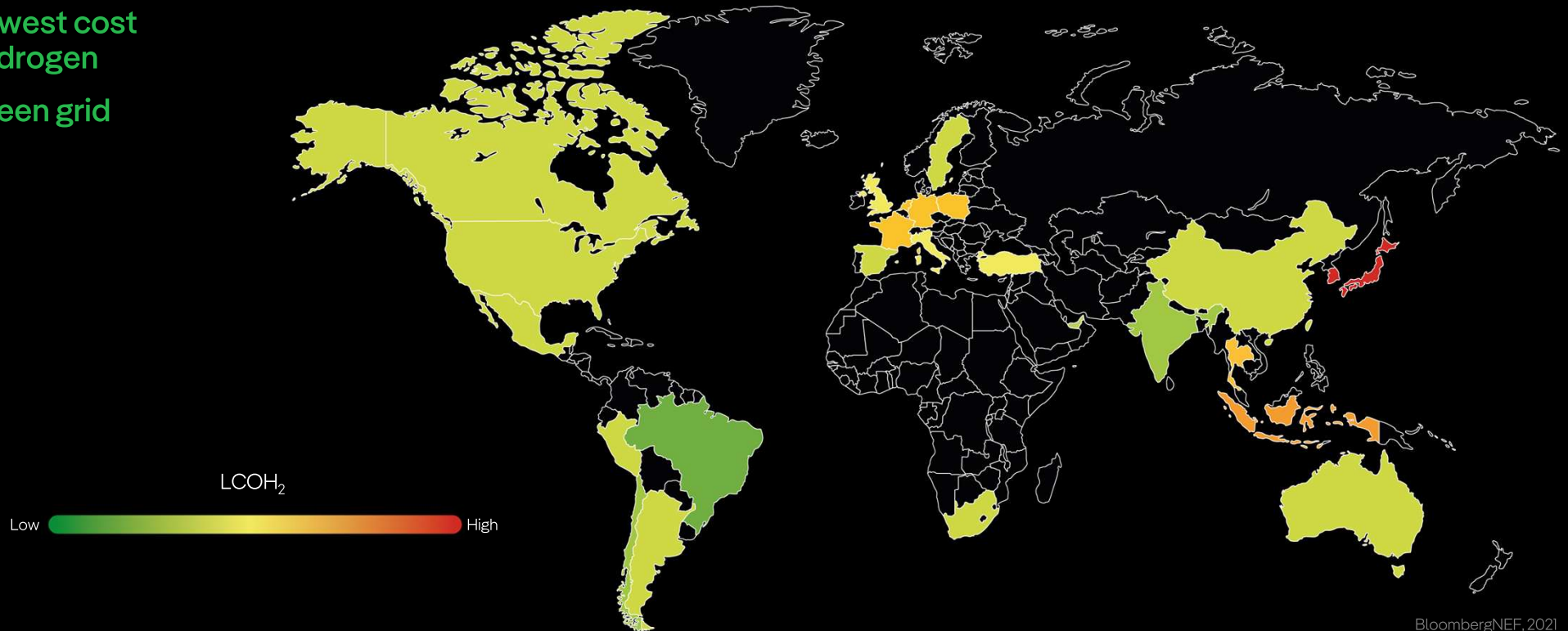
# Green Energy Park in Brazil



# Why Brazil?

- World-class renewables
- Lowest cost hydrogen
- Green grid

LCOH<sub>2</sub> from renewable electricity







# Strategic Partnership Eletrobras

Public Announcement, 14 May 2024

Green Energy Park is the official hydrogen partner of Eletrobras.

- Eletrobras is one of the biggest renewable energy companies in the world
- Together the companies have signed a strategic partnership agreement for over 10GW of renewable hydrogen projects in Brazil and around the world



# Green Energy Park in Brazil



**1. GIGA PARK Maranhão (Green HBI)**  
**0,6GW (3.6 GW)\***



**2. GIGA PARK Piauí (Ammonia)**  
**1,8GW (10.8 GW)\***



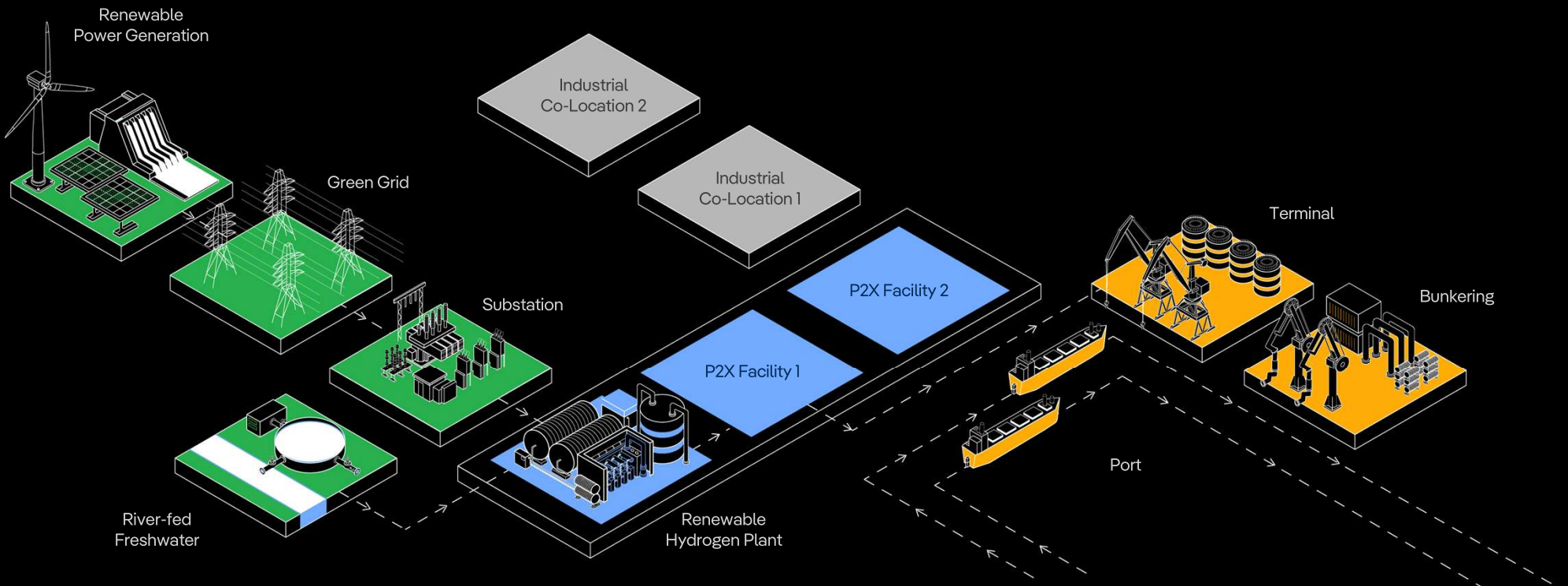
**3. GIGA PARK Sergipe (carrier tbc)**  
**0,9GW (5.4 GW)\***

Notes: \*estimated site capacity

# A Giga Park is an Industrial Growth Platform

Enabling industrial decarbonization:

- Leverages existing infrastructure
- Anchored by renewable P2X facilities
- Co-location of green industry and services





# Global Gateway Funding

President von der Leyen keynote address at the EU Hydrogen Week, 20 Nov 2023



Quote:

“Together with President Lula of Brazil, we are announcing the **European Union's support** to build one of the biggest hydrogen projects in the world, in the Brazilian State of Piauí. It is part of a **two-billion-euro Global Gateway investment** in the hydrogen value chain in Brazil.

This new **Green Energy Park** will be a 10 GW production facility for clean hydrogen and ammonia, which will then be shipped to the island of Krk in Croatia. From there, hydrogen will travel to serve industrial off-takers in South-East Europe. And in parallel, this project will create local jobs and value chains in Brazil.”



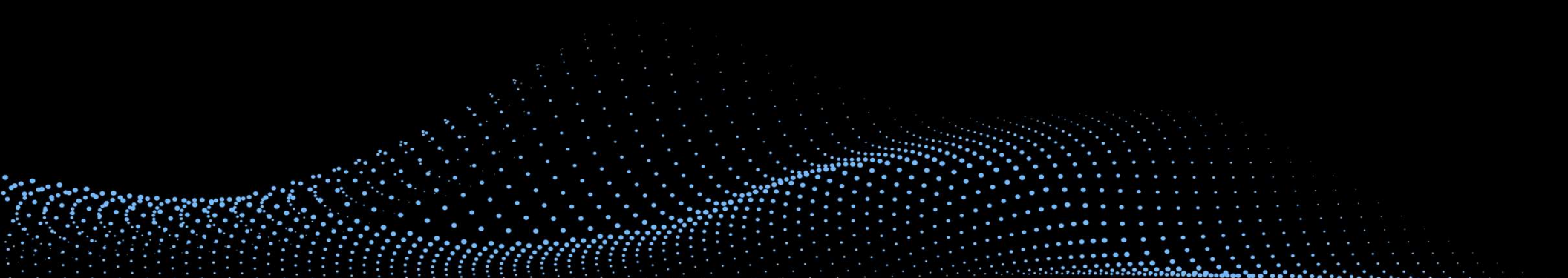


# “Climate and Energy” Flagship 2025



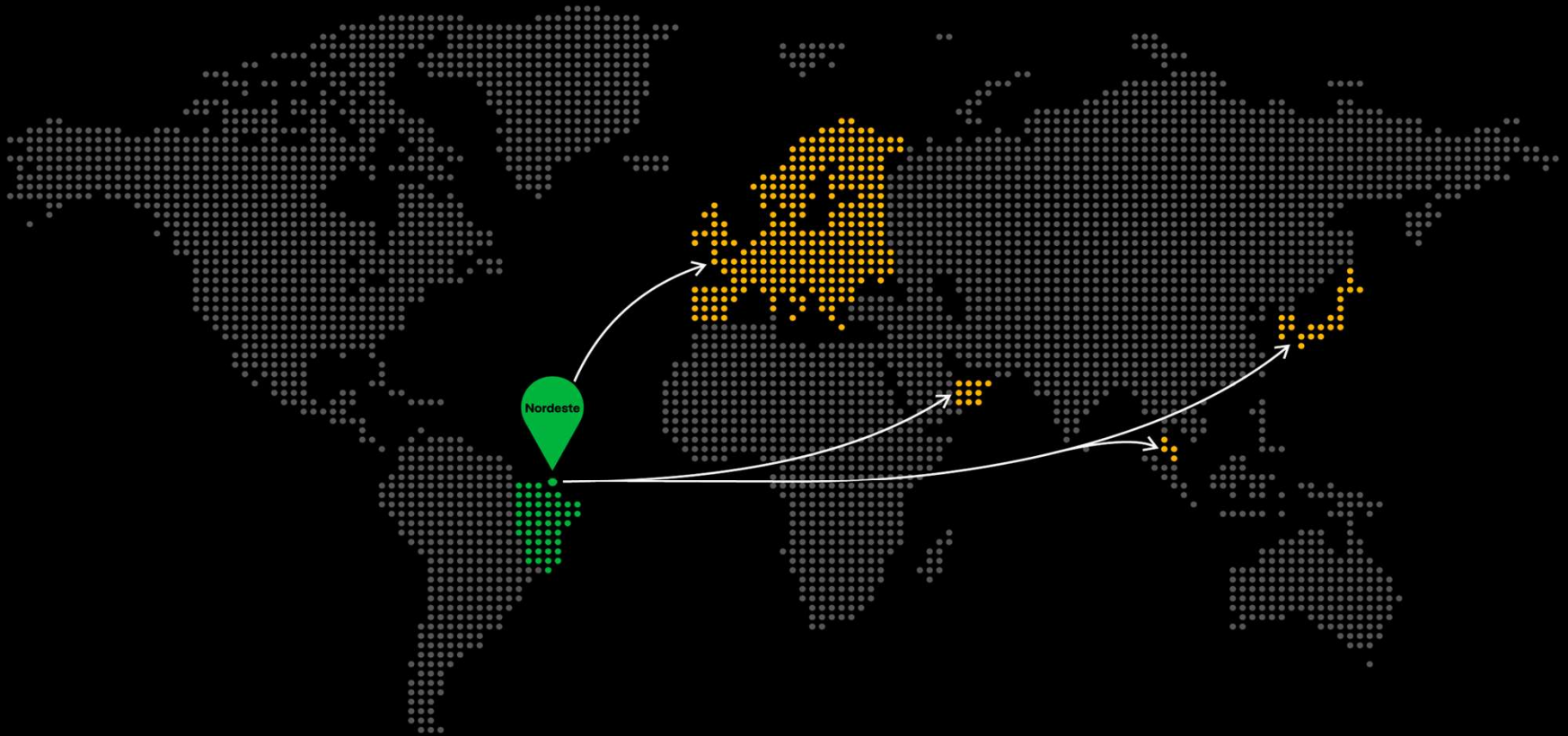
## “Brazil North-East Green Energy Parks and Green Shipping Corridors”

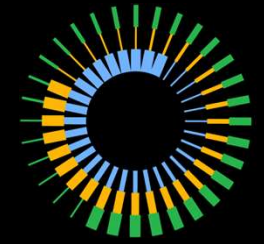
22 Nov. 2024 Council of the EU





# Green Shipping Corridors



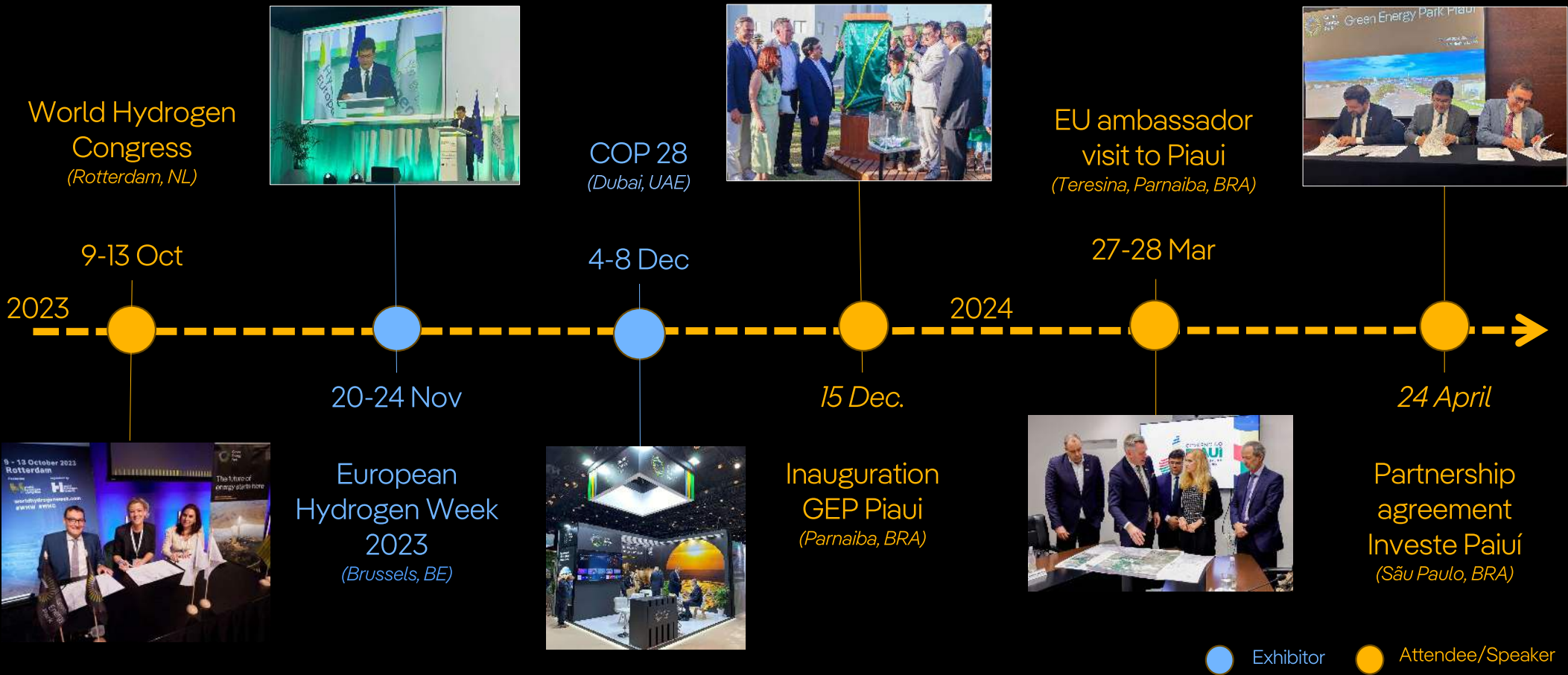


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# GIGA PARK Piauí



# Company Milestones



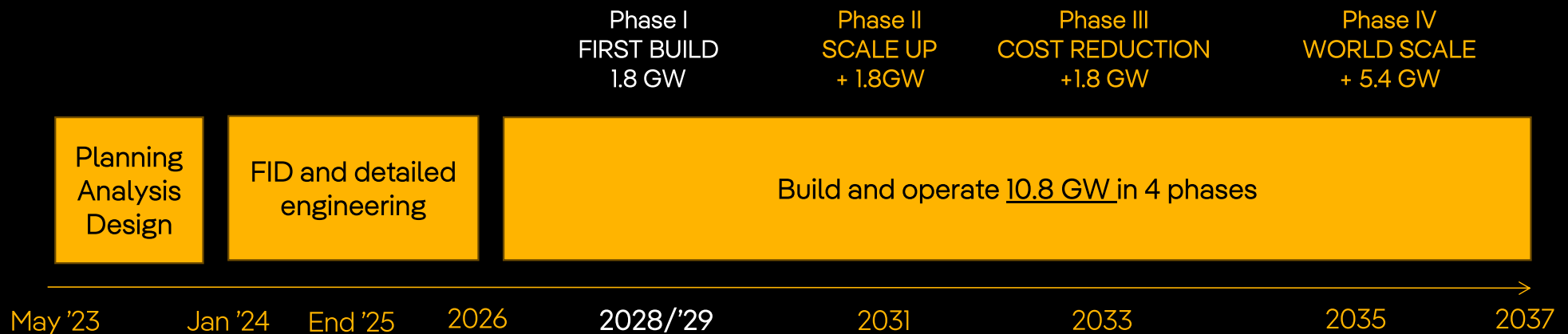
● Exhibitor

● Attendee/Speaker



# Giga Park Piauí

## 2023 – 2037 project timeline



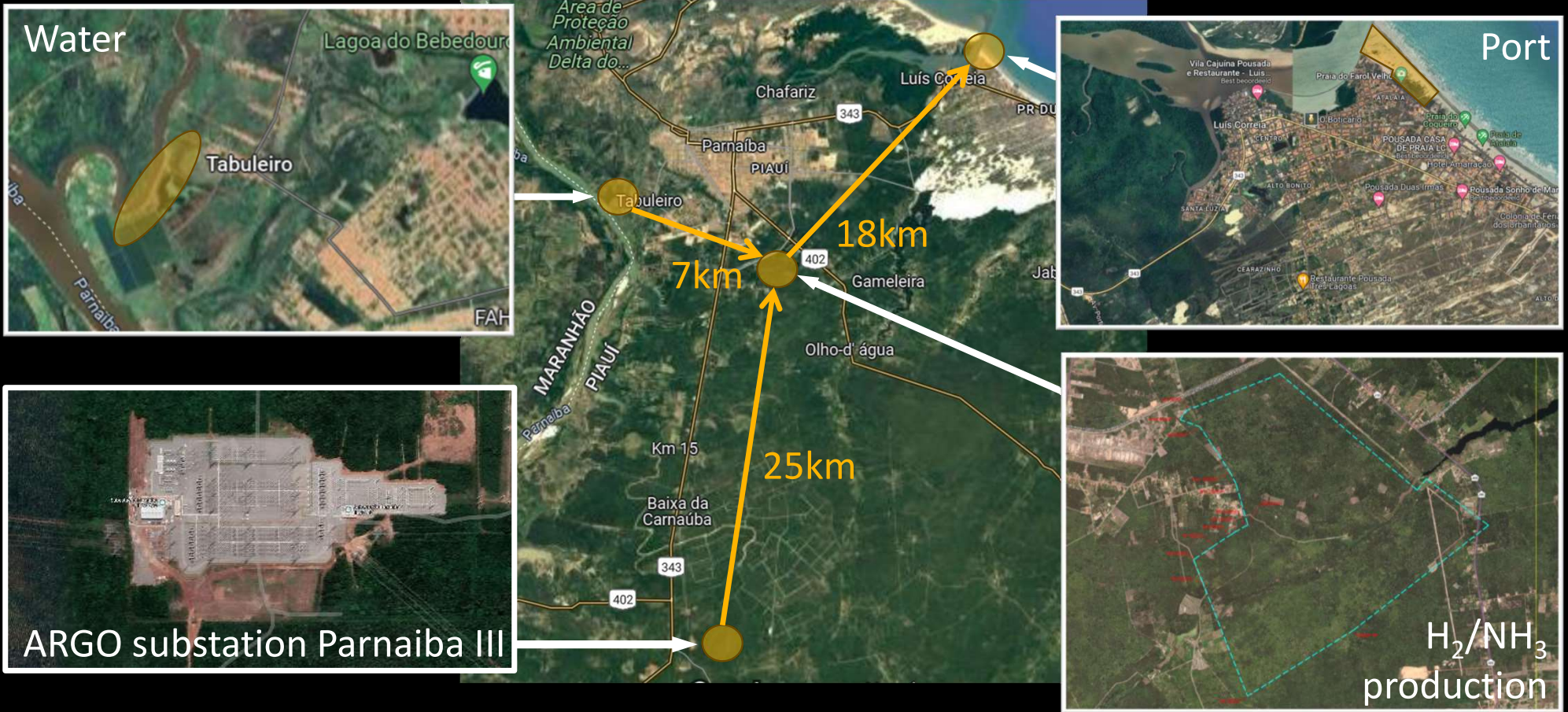
EID @COP 30



Phase 1 FID is first priority:

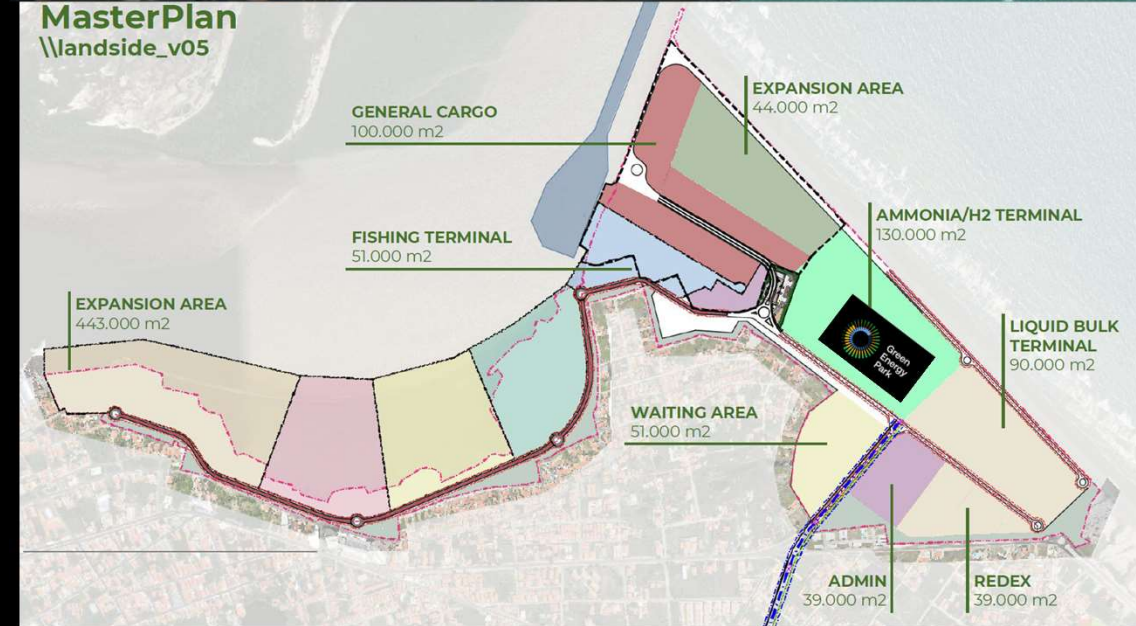
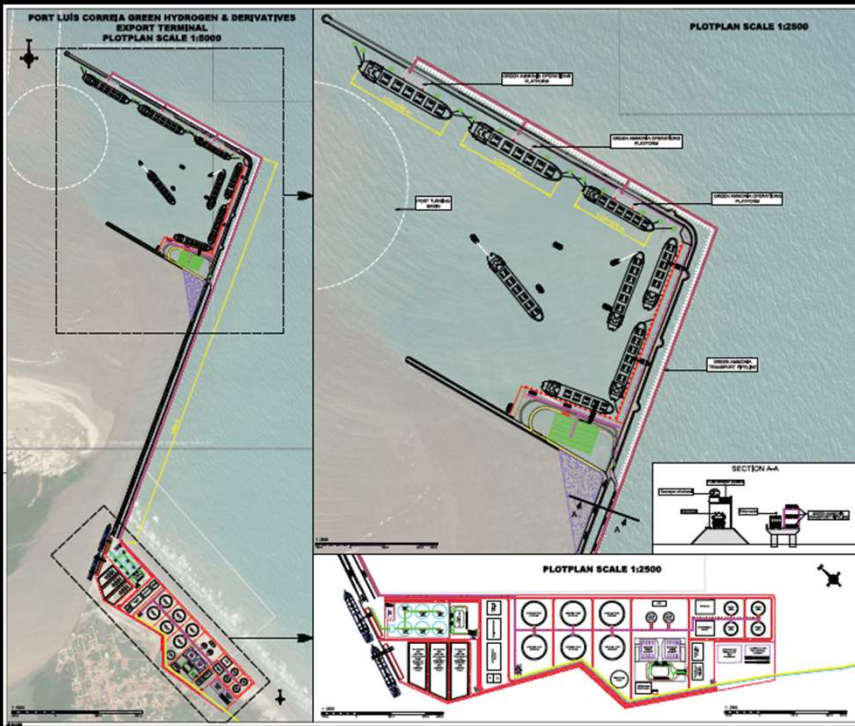
- Good progress with local & EU off-takers
- Various permit requests underway
- Build out financing on track

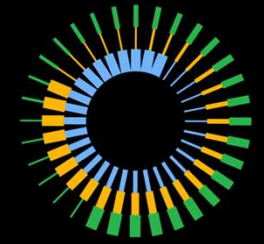
# Infrastructure & Location





# Export Terminal Luis Correia





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# GIGA PARK Maranhão



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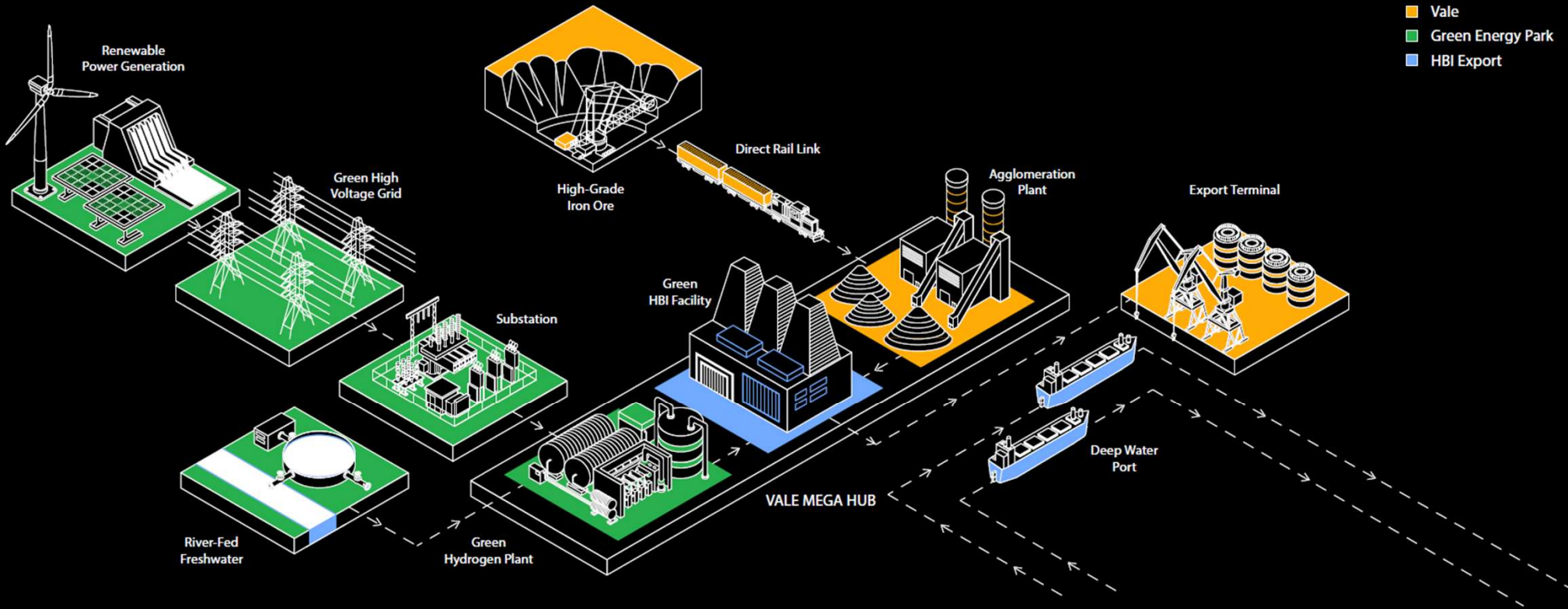


Strategic  
Partnership  
for Green Steel



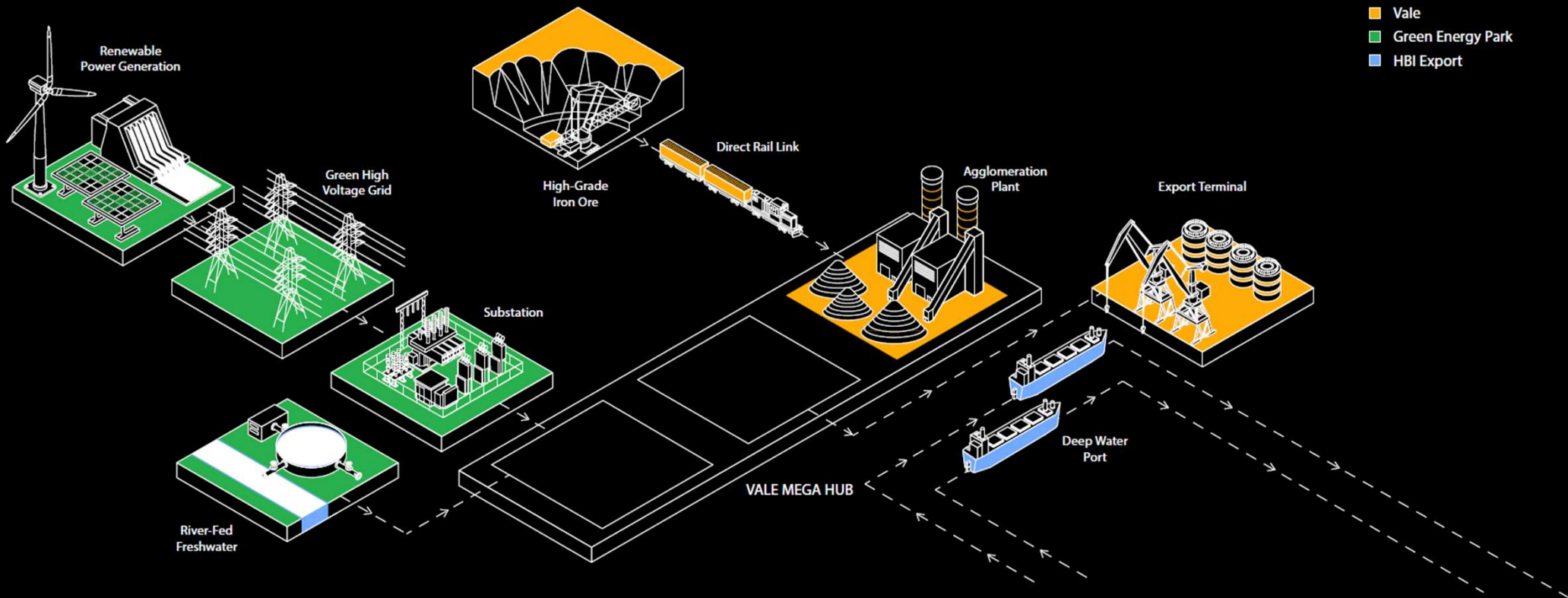


# Integrated Green HBI production facility platform





# Existing infrastructure significantly reduces CAPEX and project-on-project risk



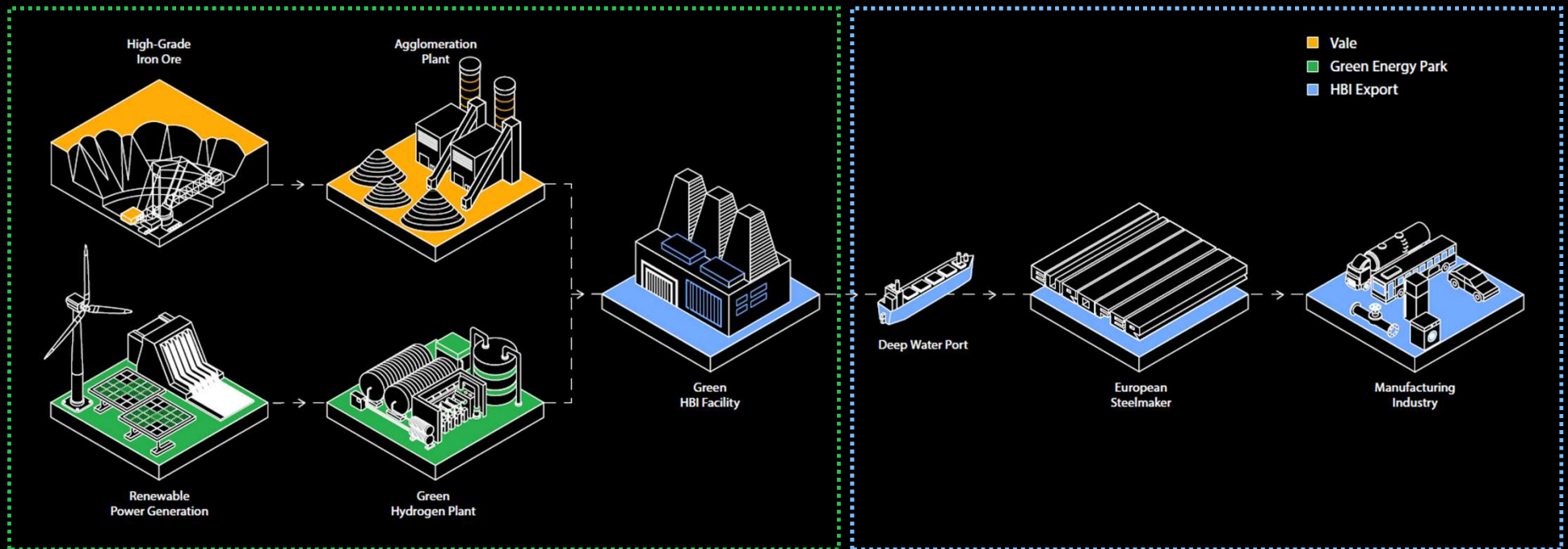
# Concept designed to match opportunities & needs between both Brazil and Europe



## Ironmaking Brazil













## Steelmaking Europe

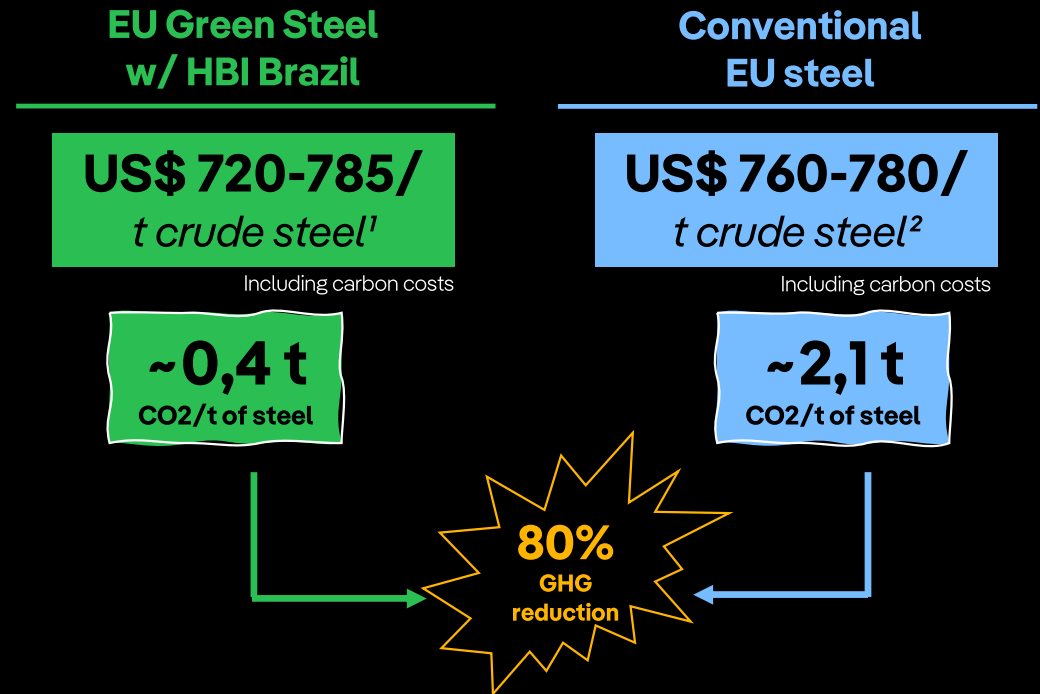


# Parity With Conventional Steel

## Most relevant assumptions

	High grade DR pellet US\$ 170-190/t	
	Electricity US\$ 30-35/MWh	
	Green hydrogen US\$ 2,5-3,0/kg	
	Scrap US\$ 360-440/t	
	Carbon cost US\$ 100-130/t CO <sub>2</sub> e	

EU steelmakers can eliminate up to 80% of CO<sub>2</sub>/t steel at unchanged economics



1. As of Jan 2025: DRI-EAF route (EU Green Steel with HBI Brazil) and BF-BOF route (Conventional EU Steel), Scopes 1,2 and 3 were considered (Carbon intensity of pellets and scope based on grid electricity in France).
2. Breakeven price US\$ 115/t CO<sub>2</sub> eq and Free allowances not considered



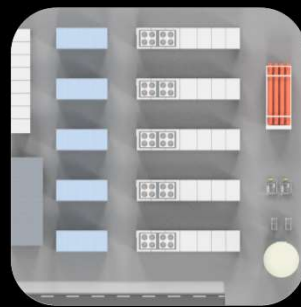
# Two Phases: Pilot and Full Build Out

## Phase 1: ~ mid 2027

(Location tbc)



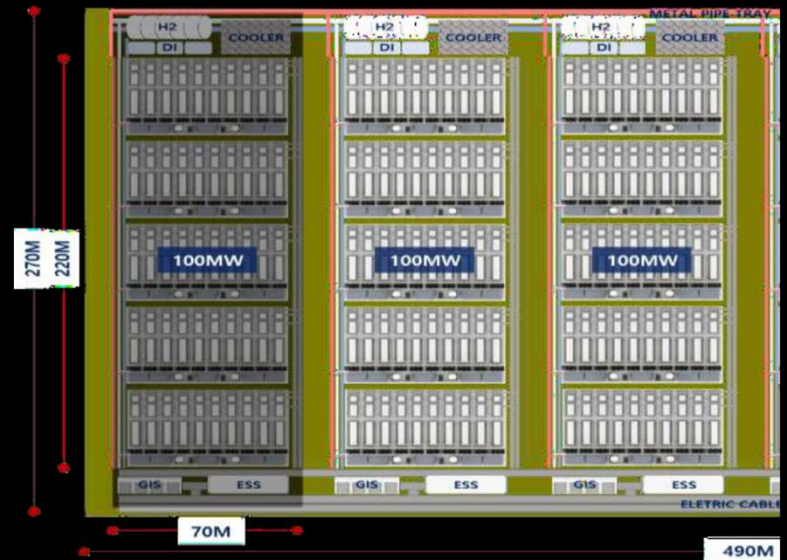
14 MW H2 production  
2 DRI Furnaces  
110k tons pellets / Year  
80k tons DRI / Year  
70k tons Steel / Year



top view

## Phase 2: ~Jan. 2030

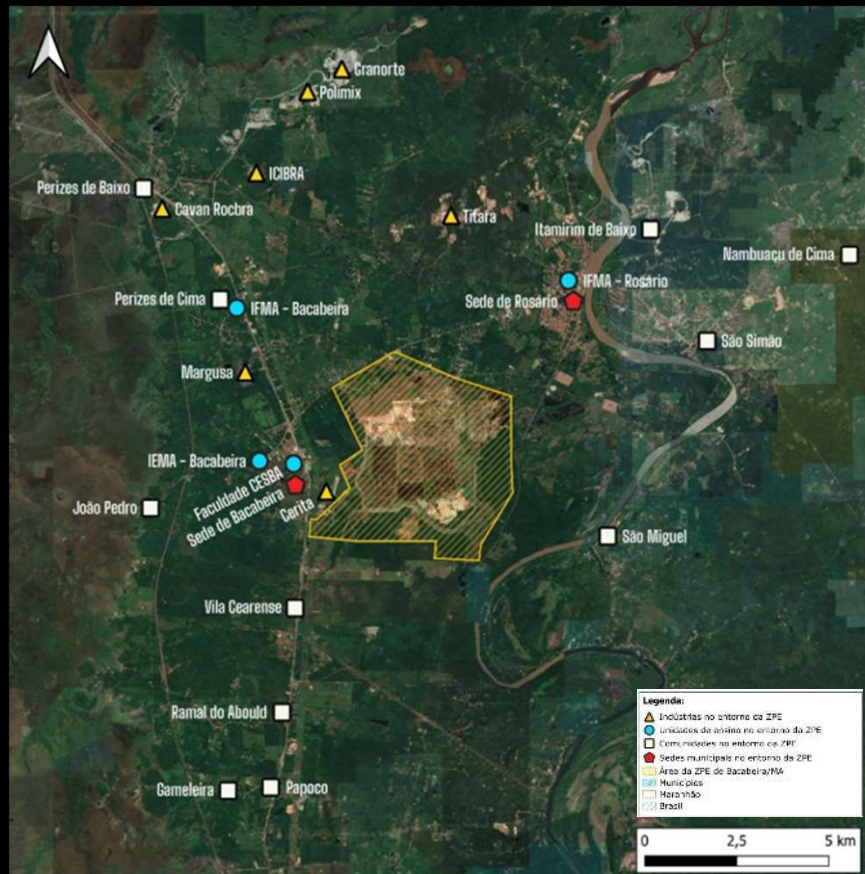
(Location Bacabeira ZPE)



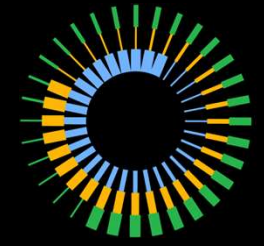
600 MW (2\*300MW) H2 production  
1 Big Furnace (Midrex or HYL)  
2.5M tons HBI / Year  
2.3M tons Steel / Year

# Phase 2 Location: Bacabeira ZPE

CONFIDENTIAL







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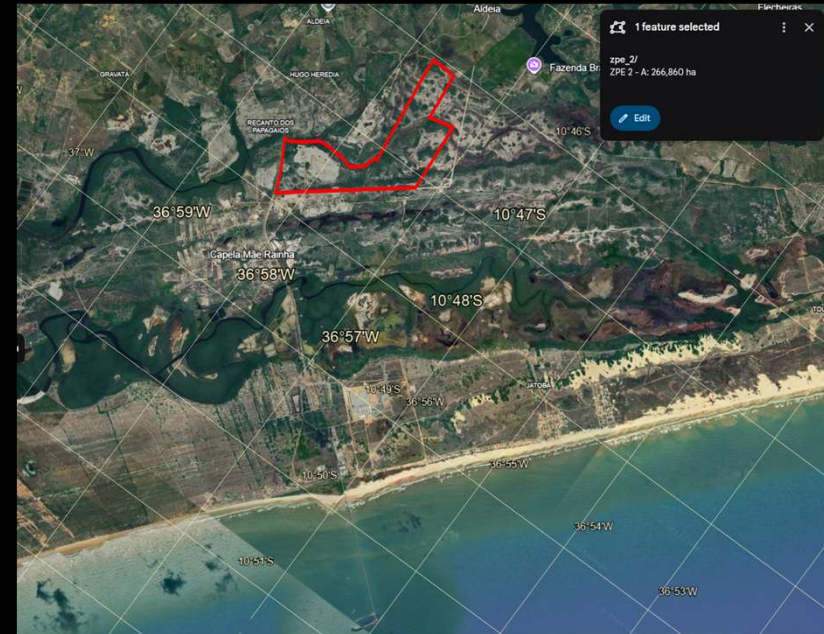
# GIGA PARK Sergipe



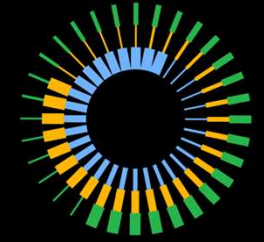


## Giga Park Sergipe specifications and state of play:

- Phase 1: 600~900MW of total 5.4GW H2 production capacity. Build out by units of 300MW based on the Piauí project.
- The H2 carrier is not yet decided.
- Off-takers locally and in Europe identified.
- Terminal 3rd party usage rights and 266,86 Ha free trade zone rights needed for successful project.







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# Giga Park Croatia

[www.gep-krk.com](http://www.gep-krk.com)





# Unique Location

The Central European Gateway for Renewable Hydrogen Supply







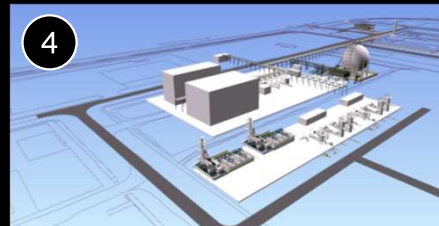
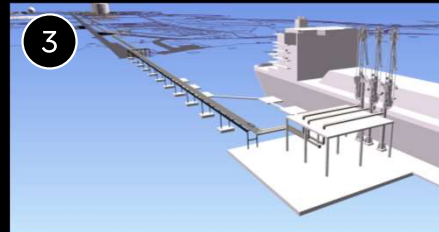
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# Mooring Area and Jetty





# Unique Asset





# Regional Offtake

Supplying European industrial heartlands representing over € 3.0trn in GDP



- Industrial heartlands of Italy (incl. Po Region)
- Industrial heartlands in South Germany and Austria
- Countries in in the Balkan Region
- North Adriatic Hydrogen Valley (NAHV): Croatia, Slovenia, and Friuli Venezia Giulia

North Adriatic Hydrogen Valley (NAHV)

- €800m total investments
- €225m in public funding
- Over 30 consortia partners: large off-takers in steel, glass, and cement



NAHV Forum, 23rd May 2023 in Slovenia

# ANNEX 1: References

## Bart Biebuyck

Graduated in Automotive Engineering in the Netherlands



1999 - 2016

- Toyota R&D, part of the Toyota Mirai development team in Europe
- Construction of the first hydrogen refuelling station in Belgium 2014-2016
- Holder of two patents in gearbox control systems
- A two-year assignment at Toyota R&D in Japan



2016 - 2023

- CEO Clean Hydrogen Partnership (formerly Fuel Cell and Hydrogen partnership), a public-private partnership of the European Commission, the hydrogen industry and research community.
- Successfully negotiated REPowerEU's €2.0 bn + €200 mln R&I programme
- Architect of the Hydrogen Valleys, European Hydrogen Week, European Hydrogen Bank



2023 - ongoing

- June 2023: Founded Hybart, specializing in international project development and consultancy.
- September 2023: Co-founded Green Energy Park, a joint venture focused on importing and selling hydrogen and ammonia in Europe, with production facilities in Brazil.

## Bart Biebuyck

During 7 years of work as CEO of Clean Hydrogen Partnership (formerly Fuel Cell and Hydrogen partnership), Bart Biebuyck supported over 1,000 beneficiaries in 340+ R&I projects, including 12+ Hydrogen Valleys.



EU-funded H2FUTURE project: the green hydrogen pilot plant at the voestalpine steel plant in Linz, Austria  
Capacity of 6 megawatts PEM electrolyser system and a production of 1,200 cubic meters of green hydrogen per hour.



## The North Adriatic Hydrogen Valley (NAHV)

Horizon Europe project supported by the Clean Hydrogen Partnership. The NAHV project foresees the development of 17 testbeds which will cover the complete hydrogen value chain. In the next few years the NAHV will contribute to the REpowerEU target of 10 million tonnes of domestic renewable hydrogen to replace natural gas, coal and oil in hard-to-decarbonise industries and transport sectors.





# TGE Gas Engineering



## Tobias Puklavec

TGE brings an extensive track record in ammonia handling, transport, and storage across various global regions. Since 1998, TGE has successfully executed numerous projects, including comprehensive feasibility studies and the delivery of EPC solutions. Some notable references include:



**PEC-RHIN S.A / FRANCE**  
*Debottlenecking / Send-Out Increase of 12,800t  
Ammonia Terminal from 170kt/a to 320kt/a*

**Toros, Tarim Sanayi, Samsun, Turkey**  
*Ammonia Terminal with 1 x 15,000 MT Tank*



**Eti Bakir A.S., Turkey**  
*Anhydrous Ammonia Terminal incl. 1 x 15,000 MT Storage Tank*

**ETIR BAKIR, Mazidagly, Turkey**  
*Ammonia Storage Facility incl. 2 x 5,480 m<sup>3</sup> Tanks*



**Formosa Petrochemical Corporation, Mailiao, Taiwan**  
*Ammonia Terminal incl. 2 x 30,000 m<sup>3</sup> Tanks*



GASFIN Group



**Tobias Puklavec**

Gasfin Group develops multiple projects in areas related to methane, propane and ethane-ethylene but its major focus lies on the development of the green energy and waste sector.



**Project Bonnie, Martinique and Guadeloupe**

Gasfin was contracted by Électricité de France SA (EDF) to provide a mid-scale LNG infrastructure solution for the French Caribbean islands of Martinique and Guadeloupe. The LNG is intended to be used in the new 200MW power plants on each island.



**Tema LNG Terminal, Ghana**

Gasfin was a founding partner of Tema LNG Terminal Co. Gasfin has led the design of the entire project, including the marine works, pipeline and the fabrication of the floating infrastructure, helping deliver a new 3 mtpa LNG import plant at a competitive price in a challenging marine and logistical environment.



**Caribbean LNG, Trinidad and Tobago**

Caribbean LNG is a mid-scale LNG liquefaction development located in the industrial zone of La Brea, Trinidad. The project received all permits required for immediate construction of a 500,000 to 1,000,000 tonne LNG export plant.





# MT GROUP



## Mindaugas Zakaras

MT Group is a leading EPC contractor, established in 2008. With a robust track record, MT Group has successfully executed a wide range of energy projects, encompassing oil and gas, offshore operations, renewable energy, as well as port and infrastructure development.

### 60MW HEATER FACILITY AT BRUNSBÜTTEL LNG TERMINAL (GERMANY)

#### KEY PROJECT DETAILS:

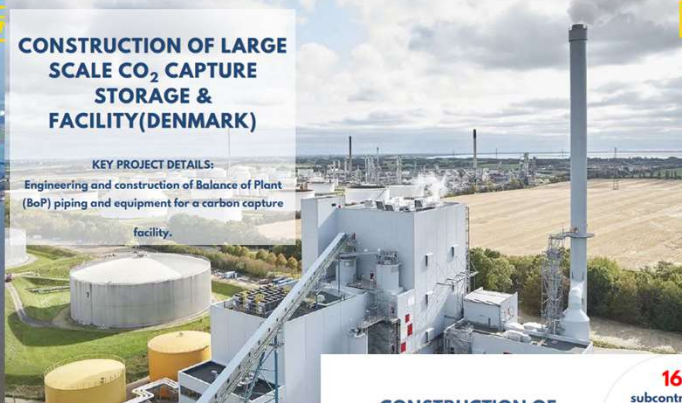
MT Group to handle general construction and mechanical works, including the installation and commissioning of technological equipment, electrical, and automation systems, and to oversee the entire construction process.



### CONSTRUCTION OF LARGE SCALE CO<sub>2</sub> CAPTURE STORAGE & FACILITY (DENMARK)

#### KEY PROJECT DETAILS:

Engineering and construction of Balance of Plant (BoP) piping and equipment for a carbon capture facility.



### CONSTRUCTION OF GAS PIPELINE AND GMS FOR LNG TERMINAL IN KLAIPEDA (LITHUANIA)

ENGINEERING AND CONSTRUCTION OF 18km OF PIPELINE AND GAS METERING STATION DN700, DESIGN PRESSURE 60bar, GAS METERING STATION CAPACITY 500,000 Nm<sup>3</sup>/h, 6 X HDDS (INCLUDING 2,300m LENGTH & 600m WITH OFFSHORE UNDERWATER CONNECTION), PIPE RISER, HIGH PRESSURE GAS PLATFORM PIPING TO CONNECT WITH LOADING ARMS

76 subcontractors, suppliers and services providers managed by MT team



### VILNIUS WASTE TO ENERGY PLANT FLUE GAS CLEANING SYSTEM ERECTION WORKS (LITHUANIA)

KEY PROJECT DETAILS: 88 MW electricity and 227MW heating capacity CHP  
Scope: Manufacture and erection of flue gas condenser building equipment, manufacturing of FG ducts steel structures, SS pipes and humidifier of flue gas condenser building.



### CONSTRUCTION OF ONSHORE GAS PIPELINE FOR BALTIC PIPE PROJECT CONNECTING DENMARK AND POLAND GAS GRIDS (POLAND)

#### KEY PROJECT DETAILS:

PIPELINE DN900/DN1000 DESIGN PRESSURE 120/84bar, 41km  
KONARZEWO RECEIVING TERMINAL CAPACITY 31M Nm<sup>3</sup>/day  
NIECHORZE LINEVALVE STATION DN900  
PLOTY GAS TRANSMISSION HUB  
WILCZKOWO LINEVALVE STATION DN1000

165 subcontractors, suppliers and services providers managed by MT team





# NORD STEEL



## Mindaugas Zakaras

Nord Steel specializes in producing **high-quality steel products and engineering solutions**, including structural steel, pressure vessels, and piping. The company provides a wide range of certified products, such as tanks, pipe racks, and service platforms, meeting the highest industry standards.

### BIO-LNG, SKID SYSTEM



### CO2 CAPTURE, SWEG REACTORS



### LNG CAPACITY INCREASEMENT



### AMINE PURIFIER VESSELS FOR BIO FUEL







## Mario Reinisch

PhD in economics and finance, summa cum laude, UC Berkely, KFUG, Austria



### Relevant Experience

- +100 transactions since 1999 as financial advisor, principal investor, and owner-operator
- +25 years of capital markets experience: in M&A advisory, Private Equity, Venture Capital, and Alternative Investments. Winner of the prestigious HFR award
- +4 years of leadership in the global hydrogen sector:
  - Co-Founder of Exogen Hydrogen Solutions,
  - Co-Founder and CFO at Green Energy Park



### Professional Associations

- Morgan Stanley, M&A advisory, New York, NY
- SISU Capital, private equity and capital markets services, London, UK
- Park Lane Capital, venture capital and investment advisory, London, UK
- Exogen Hydrogen Solutions, renewable energy applications, Milan, Italy
- Green Energy Park | Global, integrated hydrogen producer, Rotterdam, the Netherlands

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THE END