H2BRAZIL

FOR A GREENER TODAY

Green Hydrogen Production Plants in Brazil:

- H2X Minas Gerais
- H2X Rio de Janeiro

The Energy Transition Can’t Wait

Global climate commitments are forcing a rapid shift away from fossil-based fuels:

- **Paris Agreement:** 43% global emissions reduction by 2030

- **IMO Net-Zero:** Mandate for net-zero shipping emissions by 2050
Binding global standard for ships and vessels over 5,000 GT (covering 85% of emissions), coming into effect in **October 2025**

Policy Tailwinds Driving Demand:
- **EU SAF Mandate**: 1.2% in 2030 → 35% in 2050
- **IMO Net-Zero Framework**: Carbon-neutral shipping by 2050
- **FuelEU Maritime & CBAM**: Accelerating clean fuels adoption and pricing carbon-heavy imports

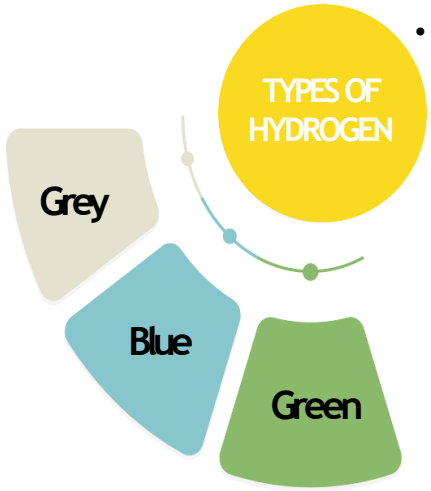
The paradox of our time:
The greatest energy transition in history requires replacing cheap power with cleaner — but more expensive — alternatives

Hydrogen: The Fuel for Energy Transition

Green hydrogen is essential to achieving global decarbonization goals — yet current costs remain too high for widespread adoption.

Today's hydrogen market is still dominated by **highly polluting production methods**, chosen primarily for their lower cost but increasingly at odds with global climate targets:

- **Grey Hydrogen** – Produced from fossil fuels (natural gas); costs **€2.8–€3.5/kg** but generates **very high CO_2 emissions**
- **Blue Hydrogen** – Fossil-based with carbon capture; costs **€2.5–€3/kg**, but **falls short of full sustainability**
- **Green Hydrogen** – Produced from renewable sources (electrolysis, thermolysis, or photolysis); the **only zero-carbon solution**, but still costs **above €6/kg**



Green Ammonia & Fertilizers
Global Opportunity

Massive growth forecast:

- Market projected to escalate from **USD 0.3 B in 2024** to **USD 6.2 B by 2030** (CAGR ≈ 66%)
- Conservative estimate: **USD 0.5 B in 2024** → **USD 3.2 B by 2030** (CAGR 45%)

Fertilizer sector driving demand:

- Agriculture accounted for **~59%** of green ammonia usage in 2023
- Green ammonia expected to supply **20% of global urea production by 2030**, up from under 2% today

Policy and regulation tailwinds:

- EU carbon pricing (ETS & CBAM) and renewable mandates push fertilizer producers toward cleaner inputs

Low-carbon feedstock demand rising:

- Global ammonia output: ~240 Mt per year, with **>80% used in fertilizers**
- Fertilizer prices volatile—energy crisis and food security concerns underscore urgency for green alternatives

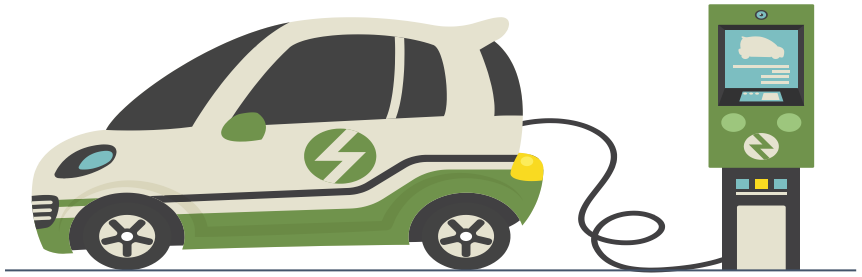
Global Market Demand for Green Methanol & E-Fuels

Methanol as the Cornerstone of Synthetic Fuel Pathways

- **Foundational Molecule for E-Fuels**
  Methanol is a key intermediate in the production of e-diesel, e-jet fuel, and e-naphtha, forming the backbone of **the Power-to-Liquid** route
- **50% of Global Liquid Energy by 2050**
  Green methanol could supply up to half of the world's liquid fuel demand by 2050 (IRENA)
- **Explosive Growth in Demand**
  Current global consumption: **120 million tons/year**
  Projected demand by 2050: **385 million tons/year**
  Green methanol is rapidly emerging as a **carbon-neutral alternative**, directly competing with fossil-based (grey) methanol.

Industrial & Transport Demand

- **Maritime adoption**: Major shipping companies (Maersk, COSCO, CMA CGM) are transitioning fleets to methanol
- **Aviation & shipping**: E-fuels are critical for sectors where **electrification is not viable**



Brazil – The Opportunity to Lead the Green Hydrogen Revolution

In the next years Brazil will have the **lowest hydrogen production cost in the world (McKinsey).**

Brazil has a **surplus of renewable energy.**

The non requirement for new renewable sourced power plants (such as solar and wind plants) to sustain the production of green hydrogen, reduces project's **CAPEX** by more than half.

A **load factor close to 98%**, significantly reduces the need for compression and storage equipment to offset renewable intermittency.

Brazil has a strong strategic infrastructure with **modern ports** and **safe shipping routes connecting it** to Europe and the U.S.

H2Brazil:
Sustainable Energy, Smart Investment

H2Brazil develops **innovative renewable energy projects**, focusing on green hydrogen and its derivatives in its H2X configurations at competitive prices.

We aim to turn Brazil's energy potential into sustainable and economically viable solutions, positioning the country as a global leader in the energy transition.

We cover all the key phases to guarantee the success of green hydrogen projects:

- ✓ **Cutting-edge engineering** to structure and optimize the technological setup.
- ✓ **Strategic location selection** to maximize efficiency and competitiveness.
- ✓ **Specialized legal advisory** for regulatory approvals and government incentives.
- ✓ **Strategic partnerships with off-takers**, ensuring steady demand and predictable revenue.

We combine our technical expertise, market vision and in-depth knowledge of the energy sector to deliver high-impact, high-profitability projects.

Our Team:
Proven Track Record in Green Hydrogen

Decades of experience in energy project origination, development, and financing

Key roles in developing the first and largest green hydrogen plants in Portugal and Spain

Leadership in **projects co-financed by the European Commission**, including:

- **Horizon 2020** and **IPCEI** (Important Projects of Common European Interest)
- **€600M+ in EU grants** secured by our team in past projects
- Focus areas: electrolysis innovation, integrated renewable hubs, and H2 infrastructure

Expertise in **structuring large-scale international funding**

Active in markets across **Europe and Latin America**, combining global expertise with **strong local partnerships** in Brazil (Minas Gerais and Rio de Janeiro)

Team members have been **invited to speak at key hydrogen industry events and policy forums**

Fully committed to **delivering bankable, scalable, and financially viable H_2 and e-fuels projects**

Team responsible for the first and biggest green H2 plants in Portugal and in Spain.

Uberaba ZPE: The Strategic Location for the Green Hydrogen Revolution

The **Uberaba (MG) ZPE free zone** was strategically chosen to maximize the **efficiency and competitiveness** of H2Brazil's project, as it provides:

- **Tax and foreign exchange incentives**, reducing costs and improving global competitiveness.
- **Pre-approved environmental license**, reducing DEVEX.
- **70-hectare secured land**, speeding up implementation.
- **Accessible renewable energy** via direct electrical grid connection.
- **Grid infrastructure** available.
- **Road and rail infrastructure** linking to Brazil's major ports.

The ideal choice to boost the production of green hydrogen and export of its derivatives on a global scale!

Uberaba ZPE: The Strategic Location for the Green Hydrogen Revolution

Local production of green hydrogen derivatives will reduce reliance on fossil-based imports and support the state's energy transition. Minas Gerais has the major industrial and agribusiness cluster in Brazil.

- **Agrobusiness:** Green ammonia for low-carbon fertilizer production
- **Mining & Metals:** E-methanol and e-fuels for cleaner processing and smelting
- **Chemicals:** Sustainable feedstocks for chemical manufacturing
- **Cement:** Low-carbon fuels to cut emissions in clinker production
- **Transport & Logistics:** SAF, e-gasoline, and e-kerosene for cleaner mobility and export logistics

World-Class Logistics Infrastructure

The Uberaba, Minas Gerais, ZPE is connected to major industrial and agricultural hubs, ensuring safe and fast transportation of hydrogen and its derivatives.

H2 MG Project in a nutshell

- Located in the **Uberaba ZPE** (Export Processing Zone), the project consists in:
  - ✓ **Green Hydrogen Plant:** With a total capacity of **820 MWe**, producing **124,325 tons of green hydrogen/year** at competitive costs (~€2.5/kg).
  - ✓ **Green H2 Derivatives Plant**:
    - ✓ Capable of producing **689,000 tons/year of green ammonia**
    - ✓ And **663,000 tons/year of green methanol**

- **The project will have 3 phases:**
  - ✓ **Phase 1**: A 20 MW electrolyzer to be used to sustain the local demand for hydrogen and its derivatives (in the steel, mining, cement and agroindustry sectors).
  - ✓ **Phase 2**: additional 200 MW, the green hydrogen will be used to sustain the local demand for hydrogen and its derivatives (in the steel, mining, cement and agroindustry sectors).
  - ✓ **Phase 3**: additional 600 MW to target the production of green ammonia to be used to produce green fertilizers.

- **Total investment**: R$7.8 billion / €1.242 billion / US$1.390 billion
- **Expected Project IRR**: >15%
- **Expected job creation:** ~ 1.000

H2 MG Project Status

- **Secured Land**: **70 hectares** Uberaba ZPE (agreement signed 14/01/2025)
- **Electricity Access**: signed PPA with **CEMIG**, the largest integrated energy company in Brazil, regarding access to 100% renewable power and grid access
- **Water Supply**: **Guaranteed** by Uberaba's ZPE
- **Engineering Studies:**
  - ✓ FEL 1 – Completed
  - ✓ FEL 2 – S2 2025
  - ✓ FEL 3 / FEED
- **Environmental Licenses**:
  - ✓ Preliminary License (LP): Approved
  - ✓ Installation License (LI): Scheduled for 2nd semester of 2025
  - ✓ Operating License (LO): Aligned with project phases
- **Offtakers**: international LOIs for methanol supply

H2 MG Project
Protocols and Partnerships

- **Invest Minas Gerais:** Binding MoU to support offtaker engagement and investment attraction
- **Minas Gerais State Government**: Binding MoU granting state-level tax exemption
- **CEMIG**: Strategic energy partner — the largest integrated energy company in Brazil. Low-cost green electricity supply
- **Uberaba ZPE**: **Lease agreement signed (14/01/2025)** for **70 hectares**. Includes **zero federal taxes** and full access to **incentives under the Free Trade Zone regime**.

H2 RJ Project
Port of Açu, Rio de Janeiro

Strategic Location for Green Fuels

- Located in one of Brazil's **most industrialized states**, Rio de Janeiro
- **Strong local demand + access to industrial offtakers**
- **World-class port infrastructure** with direct export capability
- **Abundant renewable energy** and regulatory support enable low-cost production
- Plant designed for both **export and domestic markets**
- Focus on **green methanol, SAF, e-fuels and HBI**
- **Ideal balance of energy availability, logistics, and market access**

H2 RJ Project
Port of Açu, Rio de Janeiro

Gateway to Europe for Clean Energy Exports

- Port of Açu is emerging as **Brazil's primary export hub for green hydrogen and its derivatives**
- Strategically located with **direct shipping access to key European ports**, including **Duisport, Antwerp, and Rotterdam**
- Existing **partnerships with major European industrial clusters** facilitate trade, logistics, and regulatory alignment
- **On-site storage facilities** for green hydrogen derivatives enhance supply security and export flexibility
- Positioned to play a **critical role in Europe's energy transition** and the reshaping of global fuel supply chains
- Offers unmatched opportunity for **cost-effective transatlantic delivery** of green methanol, SAF, ammonia, and e-fuels

H2 RJ Project
Port of Açu, the Ideal location

1. World-Class Port Infrastructure
Deep-water port with industrial capacity, licensed for hydrogen, ammonia & methanol production and export.

2. Abundant Renewable Energy
Exceptional solar & wind potential + LNG backup ensure low-cost, reliable energy for electrolysis.

3. Strategic Logistics & Connectivity
Connected to BR-101 highway, future rail, gas pipeline network, and LNG terminal for hybrid energy solutions.

4. Government & Regulatory Support
Fast-track licensing, tax incentives, and institutional backing from H2Brazil de-risk investment.

5. Direct Access to Global Markets
Export-ready to Europe, Asia & North America via integrated transoceanic shipping routes.

6. Water Security for Electrolysis
Abundance of freshwater available, supported by high-standard treatment & sustainability systems.

7. High-Capacity Grid & Off-Grid Potential
Grid connection with RFNBO capacity.

8. Export Terminal in Progress
Dedicated liquid terminal for H_2 derivatives with “plug & play” port integration.

9. Strong ESG Track Record
Biodiversity monitoring, mangrove conservation, and certified environmental reporting.

10. Circular Economy Enabled
Biogenic CO_2 from local biomass plants boosts e-fuels and carbon credit eligibility.

H2Brazil: Delivering the Breakthrough the Market Has Been Waiting For

Green hydrogen at €2.5/kg
Cost parity with grey
No longer a dream — a reality!

“We’ve built an ecosystem of partners ready to do what others say is impossible: close the price gap and deliver green hydrogen, ammonia, and methanol — at scale, and at speed.”

“When partnerships are strong, innovation accelerates. Cost parity becomes a milestone, not a vision.”

Contact us

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