Afric Hydrogene

Life is Green

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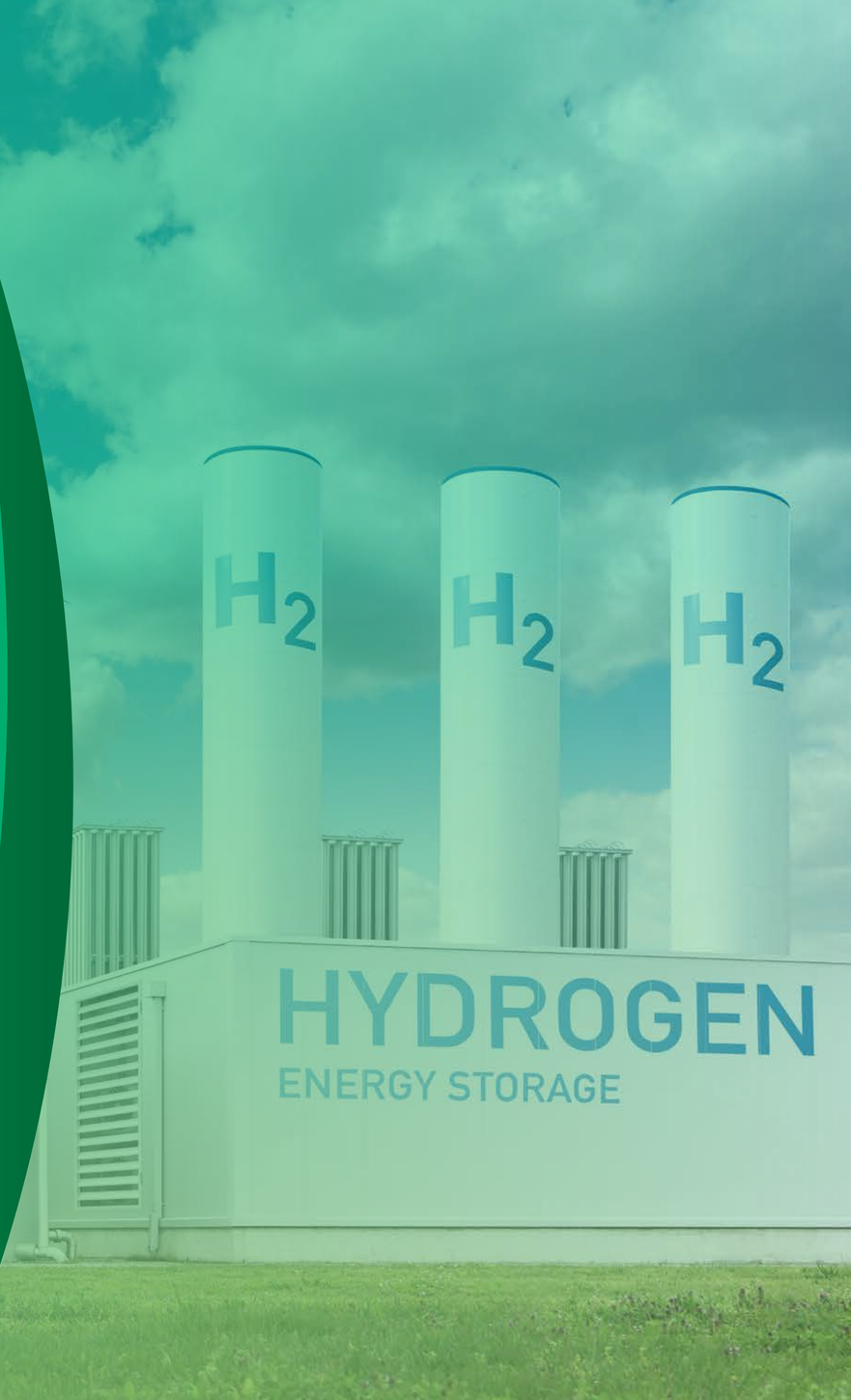
Building a Sustainable Future with Green Hydrogen

- A Moroccan engineering company committed to advancing the future pg energy through innovation green hydrogen solutions



PLANET'S ENERGY FUTURE THROUGH CLEAN AND SUSTAINABLE HYDROGEN SOLUTIONS

WHERE INNOVATION MEETS A GREENER TOMORROW

TOGETHER WITH AFRIC HYDROGENE

1 ABOUT US

Afric Hydrogene is a Moroccan engineering company specializing in the study, design, and installation of green hydrogen production units. Our mission is to accelerate the world's transition to renewable energy by providing tailored solutions that meet the demand for sustainable energy sources.

With a focus on innovation and sustainability, we deliver turnkey projects, from feasibility studies to commissioning, ensuring efficient and reliable solutions. Our skilled team of engineers and technicians is committed to driving this energy transition and positioning Afric Hydrogène as a regional leader in renewable energy.

We design solutions that power industries, transportation, and residential applications, making green hydrogen a viable energy source for all. At Afric Hydrogene, we are dedicated to building a cleaner, greener future and invite you to partner with us in creating a sustainable tomorrow.

2 PEM ELECTROLYZERS

Afric Hydrogene specializes in supporting the entire green hydrogen value chain, encompassing production, storage, transportation, dispensing, and conversion back into clean electricity. Our flagship product is the state-of-the-art turnkey, plug-and-play electrolyzers based on advanced Proton Exchange Membrane (PEM) technology, known for its high performance and efficiency in hydrogen generation.

These electrolyzers utilize electricity and water to produce hydrogen without hazardous chemicals, ensuring safety and environmental sustainability. Our systems cater to diverse applications, including industrial processes, renewable energy storage, transportation fuel, and grid stabilization.

We also offer innovative hydrogen storage solutions for both large-scale and small-scale systems, and our transportation solutions facilitate the integration of hydrogen into fueling infrastructures for quick refueling of hydrogen-powered vehicles. Additionally, we convert stored hydrogen back into clean electricity using fuel cell technology, promoting a circular renewable energy system.

By providing end-to-end solutions with a focus on durability, efficiency, and sustainability, Afric Hydrogene aims to empower industries and communities to reduce their carbon footprint. Partner with us to unlock the full potential of green hydrogen and drive the global transition to a cleaner energy future.

3 THE STRATEGIC ADVANTAGE OF ON-SITE ELECTROLYZERS

This strategic move offers multiple benefits:

Reduced Operating Costs : Utilizing renewable energy to power electrolyzers lowers operational expenses over time, making it a cost-effective and sustainable energy solution.

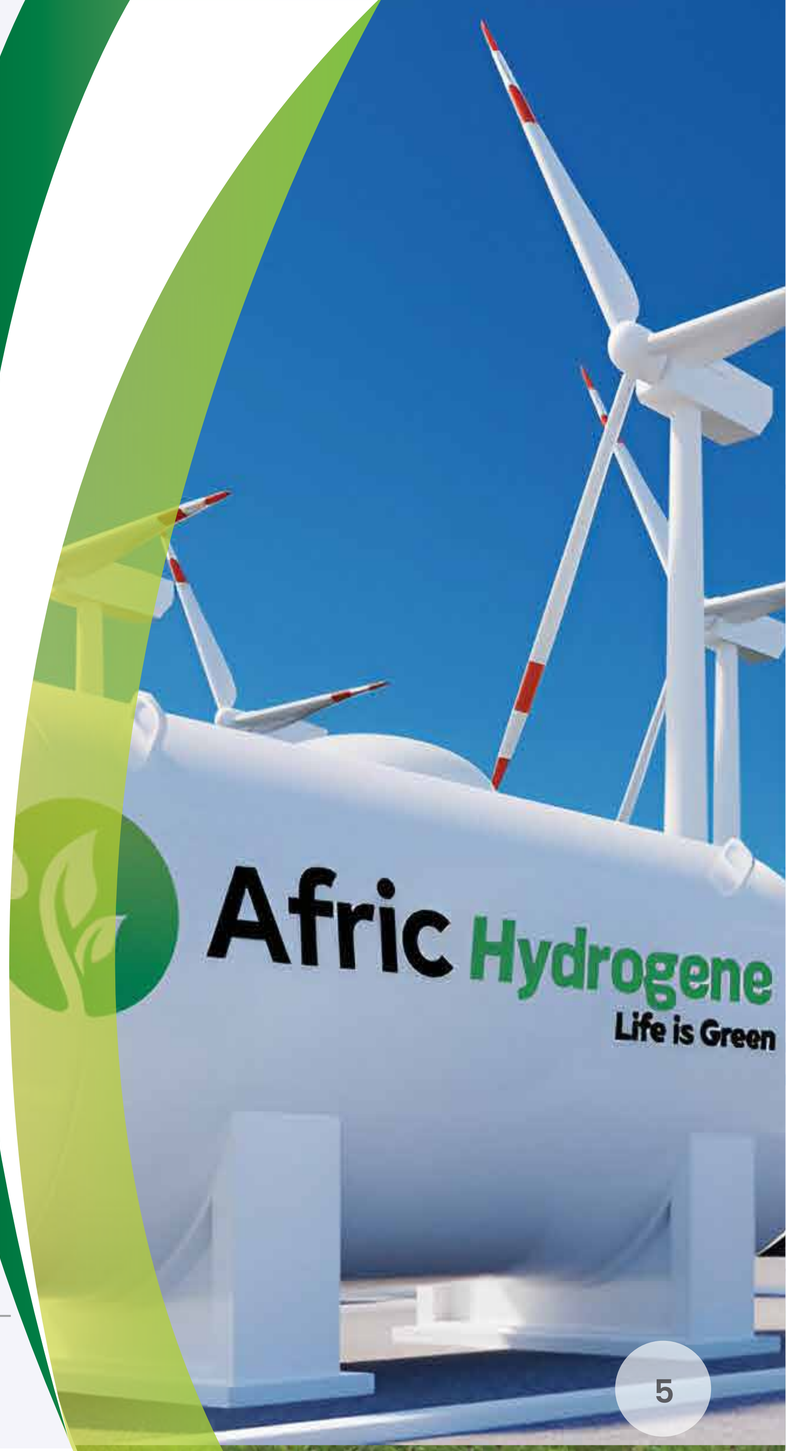
Environmental Impact Mitigation : On-site hydrogen production eliminates carbon emissions associated with traditional fossil fuels, significantly reducing the environmental footprint and supporting global decarbonization efforts.

Alignment with Sustainability Goals : Implementing electrolyzers supports corporate sustainability strategies, showcasing a commitment to environmental responsibility and adherence to global green energy standards.

Adopting on-site electrolyzers represents a transformative shift in how companies approach energy and sustainability. By integrating this technology, businesses can produce hydrogen directly on-site using renewable energy sources, reducing dependence on external suppliers and enhancing energy independence.

Beyond these economic and environmental advantages, on-site electrolyzers enable companies to create a more resilient and innovative business model. By committing to clean energy practices, businesses enhance operational efficiency and position themselves as leaders in environmental stewardship.

Companies that embrace this technology are setting new standards for responsible practices, inspiring others to follow and driving a global shift toward cleaner energy solutions. On-site electrolyzers are not just a tool; they symbolize a company's dedication to a sustainable and prosperous future.



4 SYSTEM SPESIFICATIONS

Our advanced hydrogen production system is designed to deliver high-performance, sustainable, and efficient hydrogen generation, meeting the needs of a wide range of applications. Below are the detailed specifications:

4.1.INPUT

Stack Power Consumption: Up to 5 MW
Voltage & Frequency:
6 to 34.5 kV (USA)
11 to 33 kV (EU)
Water Consumption: 14.83 liters per kilogram of hydrogen produced

4.2.OUTPUT (HYDROGEN GAS)

Volume: 990 Nm^3/h
Mass : 2,125 kg/day
Purity : Up to 99.999%
Pressure : 40 barg / 580 psig (without compressor)

4.3.OPERATIONAL FEATURES

Start-Up Time : 60 seconds for ramp-up
Average Stack Efficiency : 49.9 kWh per kg of hydrogen
Load Following Capability :
Ramp-up : 60 seconds from minimum to maximum load
Ramp-down : ≤15 seconds from maximum to minimum load

4.4.PHYSICAL AND ENVIRONMENTAL SPECIFICATIONS

Installed Footprint: Approximately 87.9 m^2 / 960 ft^2 (subject to general arrangement; further guidance available upon request)
Ambient Temperature Range: -20°C to +40°C (optional wider temperature range available)

4 SYSTEM SPESIFICATIONS

COMPLIANCE AND STANDARDS

Certifications : ISO 22734, NFPA 2, CE

SCALABLE SOLUTIONS

Our installations are designed to meet a wide range of energy needs, starting at 1 MW, 3 MW, 5 MW, and 10 MW. For larger projects, we offer scalable solutions by multiplying 10 MW modules to achieve the required power capacity, ensuring that we can meet even the most demanding energy requirements. These solutions are particularly suited for applications such as ammonia and methanol production, providing efficient and sustainable energy for industrial processes

EFFICIENCY

The efficienty rate by a load of 100% is 60%

KEY ADVANTAGES

Compact Design : Containerized Solution: Simplifies siting and installation near the point of use.

Flexible Operation : Accommodates demand up to 2,125 kg/day of high-purity hydrogen directly on-site.

Instant Load Following : Designed to adapt hydrogen production rates in realtime to match the available electric capacity. Ideal for integration with both grid and renewable energy resources.

5 OUR SERVICES

comprehensive support to our clients at every stage of their green hydrogen project. Our range of services is designed to ensure successful project delivery, from planning to execution and beyond. At Afric Hydrogene our mission

STEP 1 : FEASIBILITY STUDIES

Conduct in-depth analysis of energy needs.
Evaluate the potential for green hydrogen production based on available resources and client goals.
Provide actionable insights to support informed decision-making.

STEP 2 : ENGINEERING DESIGN OF PRODUCTION UNITS

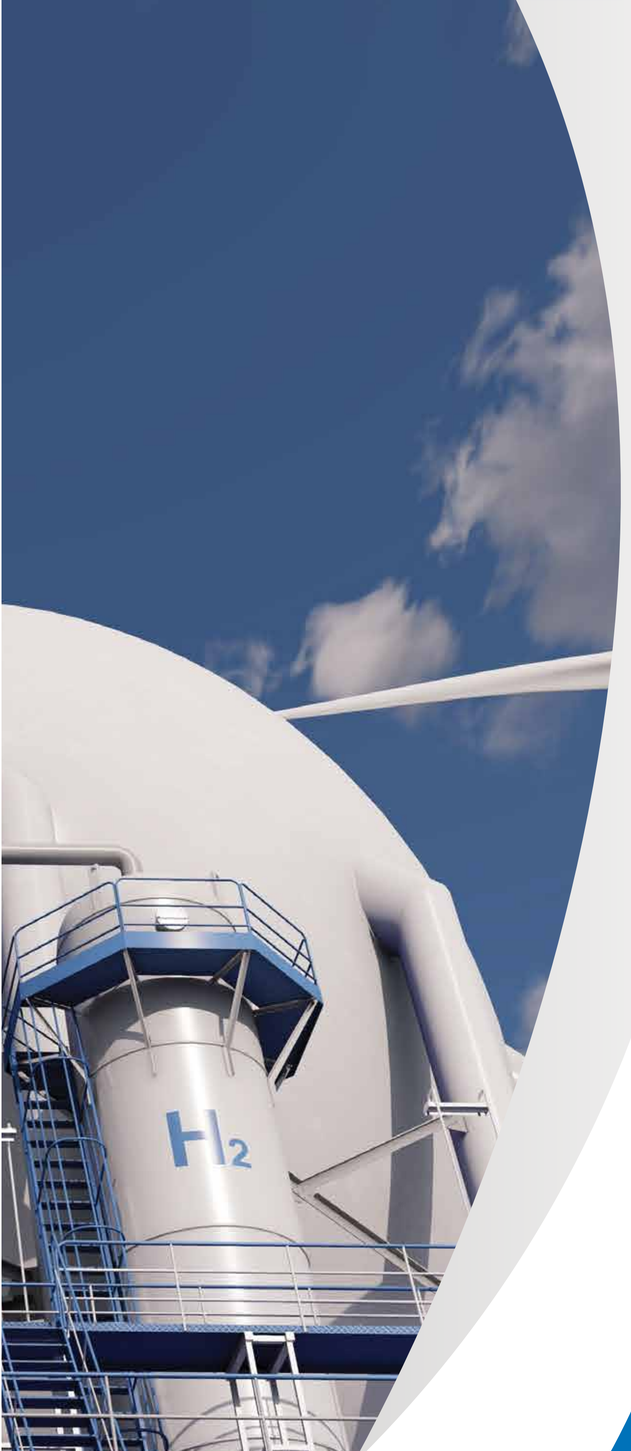
Develop tailored plans and designs for green hydrogen production systems.
Incorporate cutting-edge technology to meet client-specific requirements.
Focus on efficiency, scalability, and integration with renewable energy sources.

STEP 3 : INSTALLATION OF GREEN HYDROGEN PRODUCTION UNITS

Implement state-of-the-art production systems powered by solar, wind, or other renewable energy sources.
Ensure seamless integration with existing infrastructure for optimal performance.
Provide turnkey solutions for on-site hydrogen production.

STEP 4 : MAINTENANCE AND MONITORING

Offer post-installation support, including real-time monitoring of equipment and systems.
Provide regular maintenance to ensure optimal performance and minimize downtime.
Deliver long-term support to maximize the lifespan and efficiency of production units.



6 WHY CHOOSE AFRIC HYDROGENE SOLUTION

resources and reducing their carbon footprint. We are your trusted partner for advancing sustainable energy solutions. Here's why you should choose us: At afric hydrogene installation experts, our mission is to empower our clients by optimizing natural

6.1.CUSTOMIZED SOLUTIONS

We understand that every client is unique. That's why we design and deliver tailored solutions that align with your specific energy needs and project goals

6.2.STATE-OF-THE-ART TECHNOLOGY

Our solutions leverage cutting-edge hydrogen production technologies, ensuring efficiency, reliability, and high performance. From advanced PEM electrolyzers to innovative system designs, we provide industry-leading tools for green hydrogen production.

6.3.END-TO-END SUPPORT

From the initial feasibility study and engineering design to installation, monitoring, and maintenance, we offer comprehensive support at every stage of your project. We are with you every step of the way.

6.4.COMMITMENT TO SUSTAINABILITY

Our work is rooted in a deep commitment to a sustainable and environmentally friendly future. By choosing us, you are partnering with a company that prioritizes reducing carbon emissions and promoting renewable energy adoption.

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