



HYENERGY S.A. CAPITAL GROUP DEVELOPMENT STRATEGY. YEARS 2025-2028

Warsaw
March 2025



Agenda

- [Mission, vision, key segments](#)
- [Product](#)
- [Technology](#)
- [Market analysis](#)
- [Leads](#)
- [Competitive Advantage](#)
- [SWOT](#)
- [Business model](#)
- [Strategic objectives for 2025-2028](#)
- [Planned development](#)
- [ESG](#)
- [Financing](#)
- [Marketing Plan and Education](#)
- [Risk analysis](#)
- [Pillars of the strategy](#)
- [Contact](#)

Mission, vision, Key segments



MISSION

Our mission is to provide innovative and environmentally friendly technologies that enable the efficient use of renewable energy sources, reduce CO₂ emissions and develop an economy based on hydrogen and methanol. As part of the Group, we also develop advanced methods of molecular and genetic diagnostics, contributing to the improvement of the quality of life and health of the society.

VISION

We strive to be a leader in green hydrogen production technology and molecular diagnostics, supporting the global energy transition and the development of preventive medicine.



RES SEGMENT

Hydrogenium PSA, which is part of the HyEnergy S.A. Group, has its own technology for gasification of biomass and other substrates (e.g. plastic) in a plasma environment, allowing it to meet the needs of the industry in this area with very economically viable parameters.

BIOTECHNOLOGY SEGMENT

The HyEnergy Group also includes the DNA Research Center, a company specializing in molecular and genetic diagnostics, which allows it to diversify its activities and increase its resilience to market changes. As part of the strategy, we plan further development in the area of genetic prevention and preventive diagnostics, which is in line with global trends in personalized medicine and prevention of cancer and genetic diseases.

[Back to agenda](#)

PRODUCT

Biotechnology segment

DIAGNOSTIC SERVICES

SALE OF IVD SETS

RESEARCH SERVICES

Categories of diagnostic services:

Human genome study: exome analysis (WES) and whole genome analysis (WGS).

Predisposition to cancer: genetic testing to identify mutations that can increase the risk of cancer.

Liquid biopsy: non-invasive tests for the detection of disease based on blood analysis, enabling the selection of effective targeted therapy

Tick and tick-borne disease tests

Tests for genitourinary diseases

Establishing paternity

Diseases and genetic predispositions: genetic testing for various diseases and evaluation of the predicted properties.

Wellness Zone - health, sport and diet

[Back to agenda](#)

PRODUCT RES segment



ZIELONY WODÓR

ZIELONY CO2

**METANOL I INNE PRODUKTY
(E-PALIWA)**

Hydrogen and CO₂ are intermediates for the production of, m.in e-methanol, green fertilizers, LOHC (Liquid Organic Hydrogen Carrier) and synthetic fuels (BTL - Biomass to liquid). This technology provides significantly lower energy consumption compared to electrolysis and enables CO₂ sequestration

CO₂ sequestration is the process of long-term capture and storage of carbon dioxide (CO₂) to reduce its emissions into the atmosphere and reduce the greenhouse effect. For example.. Geological sequestration – CO₂ is compressed and injected into deep geological formations, or sequestration in building materials – CO₂ can be permanently bound in concrete and other building materials, e.g. in carbon concrete technology. CO₂ sequestration is a key part of the strategy to achieve climate neutrality and reduce net emissions to zero.

Advanced Geological Sequestration (AGS) – Advanced geological sequestration involves long-term storage of carbon in deep geological formations, LOHC stands for Liquid Organic Hydrogen Carrier.

It is a technology that provides safe storage and chemical transport in organic form (e.g. toluene derivatives).

Non-flammable plastics and CCU (Carbon Capture and Utilization) – Carbon capture and utilization technology that converts CO₂ into supplied materials, e.g. non-flammable plastics.

CO₂

BTL (Biomass to Liquid) is the process of converting biomass into liquid fuel. It is the process of producing synthetic fuels from biomass, such as agricultural waste, wood, straw or algae.

[Back to agenda](#)

TECHNOLOGY

hydrogen production

PROPRIETARY TECHNOLOGY

The Group has exclusive rights to the most energy-efficient method of obtaining hydrogen from biomass.

IP PROTECTION

Patent Application No. P.449656 [WIPO ST 10/CPL449656]

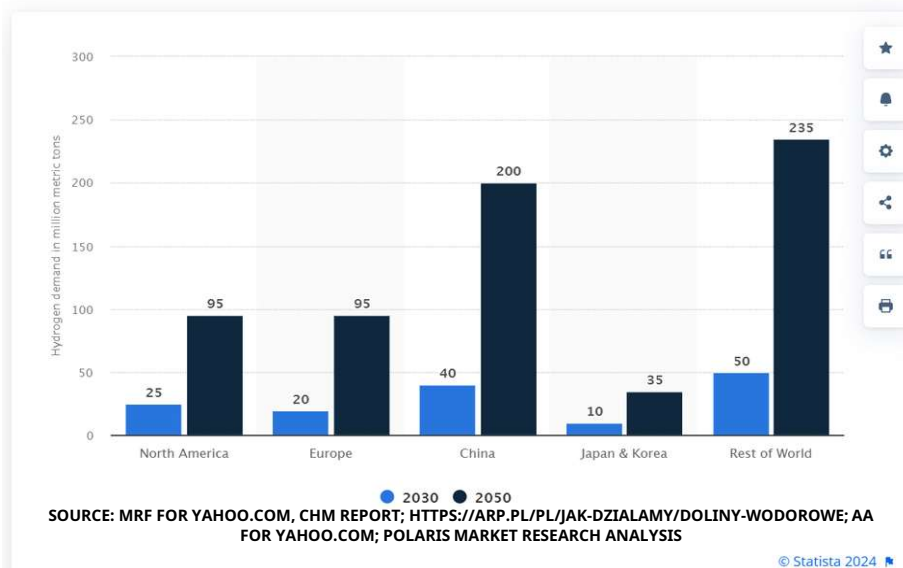
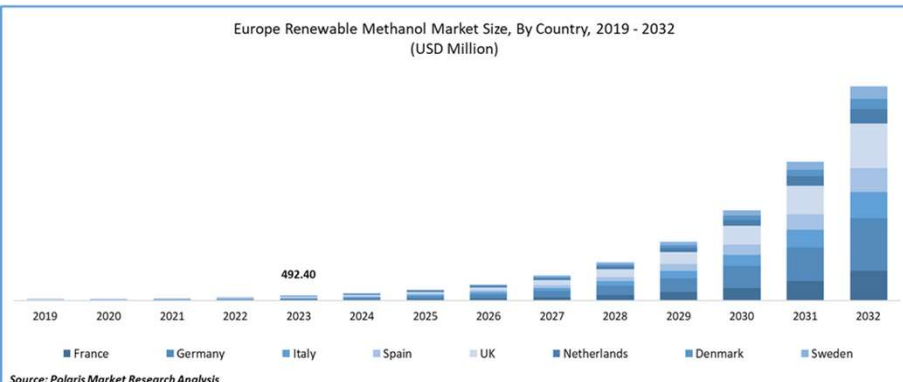
BENEFITS

The technology consists in gasification of biomass in a plasma environment induced by a high electric field. The whole process is very economically beneficial and allows the production of 1 kg of hydrogen at a cost of about 1 Euro.



MARKET ANALYSIS

SIZE AND POTENTIAL OF THE HYDROGEN AND METHANOL MARKET



MARKET ENVIRONMENT

Regulation (EU) 2023/2413 of the European Parliament and of the Council known as RED III.

- By 2030, at least 42% of green energy in industry, and by 2035 this share should be distributed to 60%
- at least 29% share of energy from RES in transport by 2030.

GLOBAL MARKET SIZE FOR METHANOL IN 2030

will amount to USD 54.6 billion
The compound annual growth rate for the European market will be 54% with a value of USD 23.8 billion in 2033.

GLOBAL MARKET SIZE FOR HYDROGEN IN 2030

will amount to USD 410.6 billion
Demand for hydrogen is expected to reach about 12.35 Mt/y in 2030. Industry will be responsible for 80% of this value.

[Back to agenda](#)

LEADS Biotechnology segment



Hospitals	Medical centers
Medical/Molecular Laboratories	Research Entities
Individuals	MLM Direct Sales

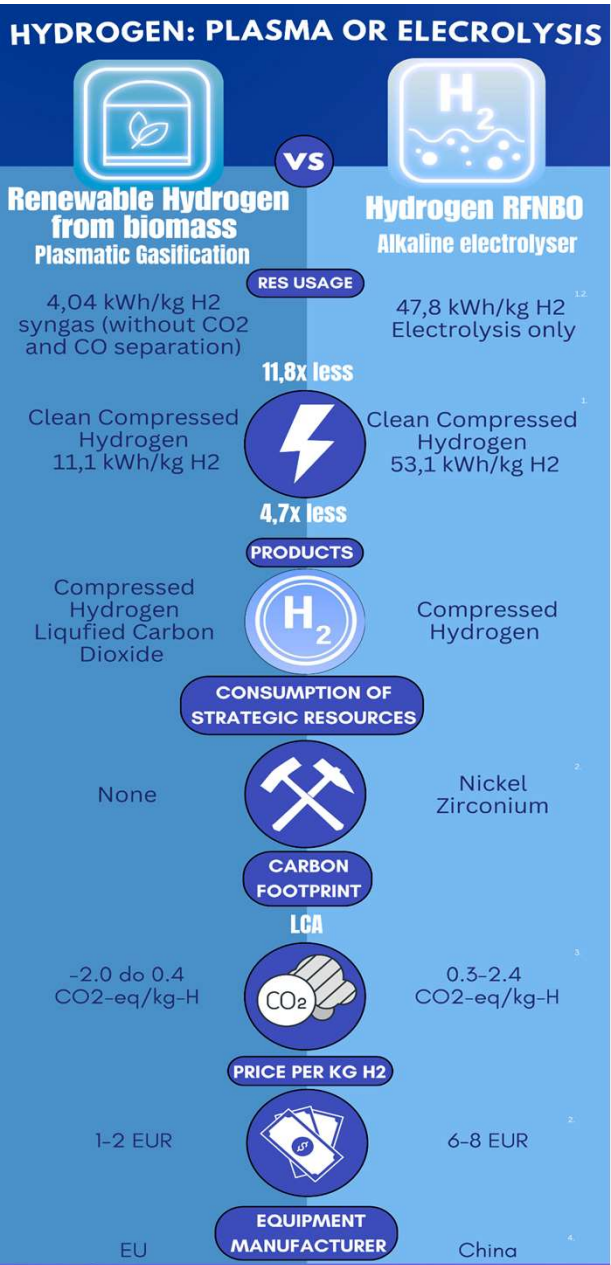
LEADS RES segment



Chemical, petrochemical and food industries.	Automotive and metallurgical sector.
Waste disposal companies	Local government units
RES infrastructure operators interested in integrating hydrogen production	Companies using CO ₂ sequestration methods (geosequestration, non-combustible plastics and CCUs, carbonate mineralisation, CO ₂ binding concretes, etc.)

Competitive Advantage

Plasma vs Electrolysis (as an alternative method)
hydrogen production by electrolysis of water



ENERGY CONSUMPTION

1 kg of hydrogen from an alkaline electrolyser is about 47.8kWh, 1 kg of hydrogen according to HyEnergy technology is about 4.04kWh

CO2 EMISSIONS

Non-zero for electrolyzers: - 0.3-2.4 CO₂-eq/kg H
Negative or zero according to HyEnergy technology: - 2.0-0.4 CO₂-eq/kg H

PRODUCTION COST

About 1 Euro/kg of hydrogen compared to 6-8 Euro/kg in the electrolysis process

Risks such as the use of elements are not without significance rare earth for the construction of electrolyzers, addition to from suppliers from the Far East in electrolysis technology

[Back to agenda](#)



STRENGTHS (S)	WEAKNESSES (W)	CHANCES (O)	THREATS (T)
<ul style="list-style-type: none"> • Proprietary technology, IP protection • Competitive Advantages • Hydrogen can be produced from a variety of materials • Recognition on the genetic diagnostics market 	<ul style="list-style-type: none"> • New technology on the market • Lack of recognition • No references after industrial implementation • Low reimbursement for genetic tests, poor buyer potential 	<ul style="list-style-type: none"> • A growing and promising market segment • Industry is looking for solutions to reduce CO2 emissions • Growing awareness of genetic prevention and targeted therapies 	<ul style="list-style-type: none"> • Geopolitical risks • Risk of halting changes in the energy sector • Risk of transferring subsidy funds to e.g. the armaments segment • Strong competition on the diagnostic market

[Back to agenda](#)

BUSINESS MODEL RES segment

Sale of Products	Licensing	Hydrogen-as-a-Service (HaaS)	Design & Research Services
<ul style="list-style-type: none">• Sale of green hydrogen, e-methanol and biogenic CO₂ products.	<ul style="list-style-type: none">• Licensing of technologies for the construction of plasma reactors and processing of biomass and other materials.	<ul style="list-style-type: none">• Sale of equipment in the Hydrogen-as-a-Service (HaaS) model, enabling the lease of installations.	<ul style="list-style-type: none">• Design, integration and implementation services for the chemical and energy sectors• Research and development in cooperation with scientific centers

Cele strategiczne na lata 2025-2028

New project companies	New markets	New IP	New Sales
<p>Launch of at least 3 special purpose vehicles implementing hydrogen/methanol projects and obtaining financing for them for the construction of the installation</p> <p>Acquiring a strategic partner for the DNA Research Center</p>	<p>Launch of operations in 3 new foreign markets</p>	<p>Application for at least 3 patents related to plasma gasification technology.</p>	<p>Commencement of production of green hydrogen or methanol and CO2 by 3 units with a total capacity of at least 3000 tonnes of hydrogen per year and 30 thousand tonnes of CO2</p>

Planned developments



DEMONSTRATOR

Construction of a full-scale technology demonstrator.



B+R CENTRE

- Development of a plasma process research and development center.
- Expanding the range of raw materials to be processed into hydrogen, including plastic waste and biomethane.
- Protecting intellectual property by filing new patents



REACTOR PRODUCTION

Launch of the production of plasma reactors at our facility in Poland.



COOPERATION

Cooperation with clinical centers in the field of cancer diagnostics and civilization diseases, and implementation of joint projects in this field

[Back to agenda](#)

ESG

Sustainable development



ENVIRONMENTAL

Reduction of CO₂ emissions, use of 100% renewable energy sources from 2027, minimization of industrial waste.



SOCIAL

Cooperation with local communities, creating jobs in the green energy sector, education on sustainable energy and genetic prevention.

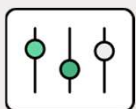
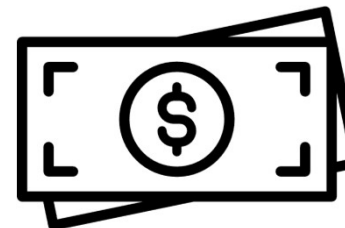


GOVERNANCE

Financial transparency, compliance with EU regulations on green energy and health care, development of ethical management standards.

[Back to agenda](#)

FINANSOWANIE



INVESTORS

Own financing and capital from private investors, venture capital funds, equity crowdfunding or token issuance
Debt financing, e.g. issuance of green bonds



FUNDING FROM EU AND NATIONAL PROGRAMMES

National and EU grants, e.g. SMART Path, National Fund for Environmental Protection and Water Management (NFOŚiGW), INNOvation Fund)



ACQUIRING STRATEGIC PARTNERS

Domestic and foreign industry entities, e.g. energy corporations or industrial plants

[Back to agenda](#)

Marketing and education plans

EDUCATIONAL CAMPAIGNS

**ORGANIZING CONFERENCES
AND WEBINARS**

**DIGITAL MEDIA MARKETING
ACTIVITIES**

**SCIENTIFIC PUBLICATIONS
AND PUBLICATIONS IN THE
TRADE PRESS**

**PARTICIPATION IN
INDUSTRY ORGANIZATIONS**

FOREIGN MISSIONS

[Back to agenda](#)

Risk analysis



Compliance	Competition	Tech problems	Availability of raw materials	Changes in the subsidy system
<p>Monitoring developments in EU policy on green hydrogen and legislation on genetic diagnostics</p>	<p>Investments in innovation and development and IP protection, ensuring the uniqueness of the technology.</p>	<p>Parallel development of alternative hydrogen production methods and new diagnostic methods</p>	<p>Diversification of biomass and waste sources used in the gasification process</p>	<p>Introduction of new models of financing genetic tests and increasing expenditure on genetic prevention</p>

[Back to agenda](#)

Key pillars of the strategy

CREATION OF SPV

Establishment of special purpose vehicles (SPVs) responsible for the construction of hydrogen and methanol production units in cooperation with industry partners.

DEVELOPING INNOVATIVE TECHNOLOGIES AND BUILDING IP

Development and implementation of new technologies. Creation of new patents

SALE OF LICENSES FOR THE CONSTRUCTION OF H₂, METHANOL, CO₂ PRODUCTION UNITS

Sale of licenses to industry entities. Bringing a license as an intangible contribution

FOREIGN EXPANSION

Building an international hydrogen production and distribution network

ESTABLISHING PARTNERSHIPS WITH MEDICAL CENTERS

Implementation of joint research projects. Attracting an industry investor for CBDNA

SIMPLIFICATION OF THE GROUP STRUCTURE

Consolidate subsidiaries to increase management efficiency

[Back to agenda](#)



Contact

Headquarters: al. JANA PAWŁA II 22,
00-133 WARSAW, POLAND

KRS 0000358293; NIP: 9721215439;

WSE ticker: HEN

@: office@hyenergy.one

 530 784 239

www: <https://www.hyenergy.one>



[Back to agenda](#)