



Polish Hydrogen Sector

Delegation to Stavanger, 6-8.09.2023
with the Polish Investment and Trade Agency's Oslo office

Companies presentations



The Polish Investment and Trade Agency

The Polish Investment and Trade Agency (PAIH) is a leader in export and investment consultancy, operating on dozens of markets around the world. As the first contact point it is a partner for entrepreneurs on the domestic and foreign markets.

PAIH is a modern institution which belongs to the Polish Development Fund Group (PFR).

How we can help...

PAIH's mission is to increase the inflow of foreign direct investments to Poland, as well as supporting the internationalization of Polish companies. We operate both in Poland and through our Foreign Trade Offices (ZBH) abroad.

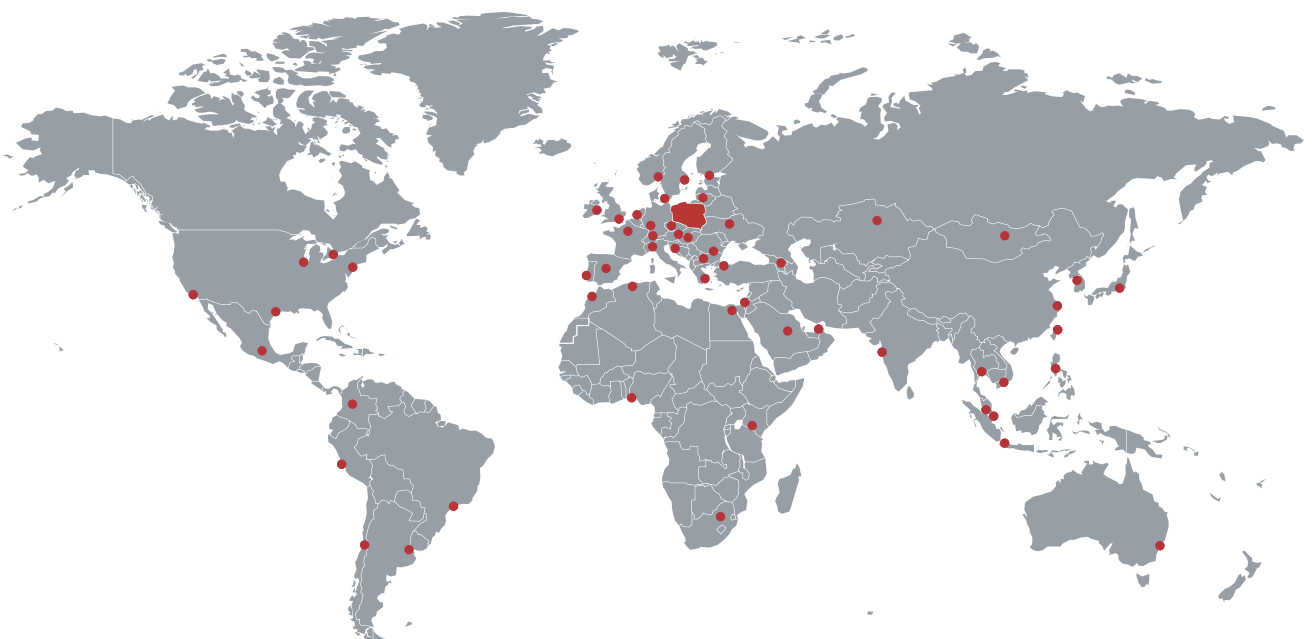
We are committed to promoting Poland and the Polish economy. We aim to increase the awareness of Polish brands on international markets. We promote national products and services, as well as Polish innovative information technology.

...build competitive advantages?

We offer comprehensive services for entrepreneurs, combining industry competences with international experience.

We help entrepreneurs select their optimal foreign expansion path, overcoming administrative procedures for specific projects, the development of legal solutions, finding a suitable location as well as reliable partners and suppliers.

Where You Can Find Us?





EURO-WELD is a Polish renowned performer,
specialised in manufacturing from print to build:

- Pipelines
- Skid systems
- Pressure vessels
- Structures, tanks
- Scrubbers SOx

The application of international norm (ISO, ASME, NORSOK) and highly qualified personnel (IWE, IWI, QS, NDT, 175 WPQF) guarantee our successful performance confirmed by long-term cooperation with our international Customers.



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WebSite: www.genergy.pl

G-ENERGY S.A. is a public company listed on the NewConnect - market of the Warsaw Stock Exchange. The leading field of the company's activity is the energy sector, with particular emphasis on services in the gas sector.

The company's core business is the design,

supervision, and construction of gas infrastructure facilities in the full range of pressures. The company is currently executing contracts for key entities in the gas industry. The largest recipients are operators of transmission and distribution networks with an established market position, playing a strategic role in the Polish economy - the ORLEN Group, in particular PGNIG Technologie S.A., Polska Spółka Gazownictwa Sp. z o. o. and for the Polish monopolist responsible for the transmission of natural gas, which manages the most important gas pipelines in Poland - Gas Transmission Operator GAZ-SYSTEM S.A., and also for the private company G.EN. Operator Sp. z o. o. The main objective of G-ENERGY S.A. is active participation in the process of decarbonization of the country.

G-ENERGY S.A. and related to us Politerm sp. z o.o. are signatories under the aegis of the Government

of the "Sectoral Agreement for the Development of the Hydrogen Economy in Poland". Its signatories were representatives of the Polish government, entrepreneurs, scientific circles and business.

We offer :

Experienced design and executive staff, we have contacts with representatives of Polish universities dealing with the possibilities of using hydrogen. Knowledge and experience on the Polish market in the area of the broadly understood clean energy market (in particular gas and hydrogen).

We are looking for:

Partners interested in using modern technologies (hydrogen, gas) in Poland and neighboring countries in the form of an investment partnership. Partners to conduct design and construction activities also in Norway with the use of our experienced staff.

Through our company (KOTŁO-REM Sędziszów sp. z o.o.) associated with nearly 40 years of experience in repair and assembly works of power and heating equipment, in particular industrial boilers, we want to develop cooperation in the field of comprehensive services of hydrogen boilers on the terms proposed by the Partner.





The institute employs 318 staff,
including 160 researchers and
engineering staff.

SCIENCE FOR BUSINESS

- SUSTAINABLE DEVELOPMENT
- ENERGY-EFFICIENT AND LOW-CARBON TECHNOLOGIES
- CLOSED LOOP ECONOMY AND RECYCLING
- ENVIRONMENTAL PROTECTION
- USE OF HYDROGEN AS A FUEL IN INDUSTRY
- USING BIOMASS AS AN ENERGY SOURCE
- FIRE SAFETY AND NOISE PROTECTION
- ESG i CSRD



**ACCREDITED
TESTING LABORATORIES**

**TECHNICAL ASSESSMENT
UNIT**

**NOTIFIED BODY OF THE
EUROPEAN UNION NO. 1487**

**CERTIFICATION OF BUILDING
PRODUCTS**

Sustainable Chemistry **CENTER**



Chemical Technology **RESEARCH GROUP**

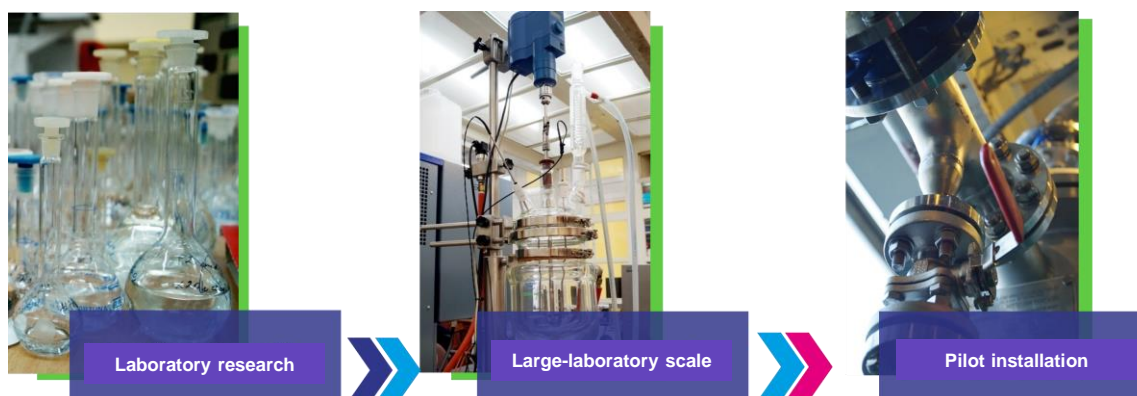
- Organic Synthesis and Separation Processes
- Catalytic Processes Research
- Petro-Bio-refinery Processes and Recycling
- Industry Analytics and Biodegradation
- Electrochemistry

Polymer Technology **RESEARCH GROUP**

- Processing Polymers Materials
- Polymer Synthesis and Modification
- Biomaterials
- Advanced Polymer Materials

Łukasiewicz – ICI is focused on...

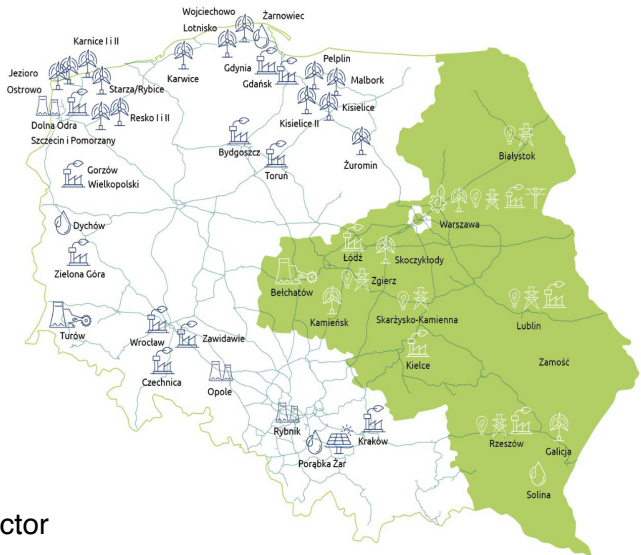
- ❖ Development of chemical/farmacy/biotechnology technologies from the concept or conceptional phase to solutions ready to implement in industry according to the scheme:



- ❖ Solve technological problems at research and production facilities using Ansys Fluent, ChemKin and ChemCad simulation software.
- ❖ Commercialization of solutions developed at the Institute into industrial practice.



Energetyka Kolejowa



The PGE Capital Group is Poland's largest energy sector company with respect to sales revenues and net profit. Thanks to the combination of its own fuel resources, power generation and distribution networks, PGE guarantees a safe and reliable power supply to over 5 million households, businesses and institutions.

PGE Energetyka Kolejowa has 19 licensed petrol stations and 62 own-usage petrol stations. In the future, we want to transform this business into H2 delivery for polish rail secto

PGE Energetyka Kolejowa clearly defined its role in the rail hydrogen value chain. We want to support the hydrogen green rail.



Production
GK PGE



Distribution
GK PGE



Refueling



Off-take

We are an investor and owner of (railway) hydrogen refueling stations.

We distribute hydrogen primarily to siding operators and railway carriers.

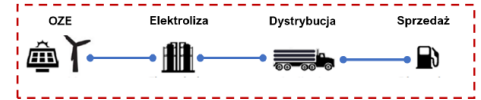
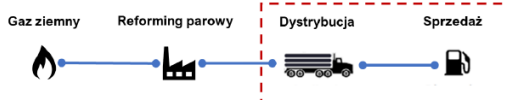
New hydrogen business



Option 1 - Purchasing hydrogen from an external supplier

Option 2 - Production of hydrogen with the National Power System

Option 3 - Production of green hydrogen from RES





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About us

In a business where **high quality** of products, **openness** and a will to **innovations** play the main role, **PGNiG Technologie S.A.** is a Polish company that successfully puts the abovementioned features together.

We are able to get the **high quality** of products thanks to:

- the team of highly skilled managers and engineers working closely with investors,
- modern machines, located in an upgraded production plant,
- the laboratory to ensure the quality of products,
- API Spec. 6A and API Spec Q1 license and many other certificates granted.

We are the market leader in providing engineering, construction, operation & maintenance services for oil & gas industry in Poland. Our products are also well known on foreign markets such as Norway, Ukraine, Germany, Czech Republic, Pakistan and Libya. We are **open** to foreign customers.

The production plant has undergone a great upgrade, including the implementation of CNC machines and **innovative** processes that make working safer and more accurate.

The Oil & Gas Infrastructure Production Division combines multi-generational experience with a modern approach to business. It designs, manufactures and repairs oil and gas equipment, as well as prefabricates steel structures for various purposes.

It is licensed by the American Petroleum Institute (API) to the API Q1 specification and, as the only one in Poland, to the API 6A specification.

Almost every piece of equipment is designed to the individual customer's order. We offer equipment in a wide range of operating pressures up to 15,000 psi, suitable for both neutral and highly aggressive environments (CO₂ and H₂S).

Our main customers are leading Polish and foreign companies operating on the oil & gas market, including ORLEN SA, ex PGNiG S.A. (Now ORLEN SA), Exalo Drilling S.A., Lotos Petrobaltic S.A., OGP Gaz-System S.A., Orlen Upstream Sp. z o.o., as well as companies valued in the construction of onshore and offshore drilling platforms: MHWirth AS (Norwegia), LLC Drilling Company GORYZONTY and Private enterprise of PROMPOSTACH (Ukraine).

Certificates

- > API as per API Spec. Q1 and API 6A (licence 6A-0595)
- > PN EN ISO 9001:2009, PN-EN ISO 14001:2005, PN-N 18001:2004, issued by UDT-CERT Warsaw, meeting the requirements of QMS
- > 97/23/EC Directive, issued by UDT-CERT Warsaw
- > Det Norske Veritas Rules for Classification of Offshore Drilling and Support Units, issued by Det Norske Veritas Poland for welded steel structures
- > UDT Inspection Office Laboratory – laboratory testing certificate

**EXPERIENCED SPECIALISTS
INNOVATIVE SOLUTIONS
EXCELLENT COOPERATION**



Who We Are?

A strong team of specialists with expertise gained over the years. We implement projects in the following sectors:

Hydrogen industry

Installations for the production of green and gray hydrogen

Crude oil and natural gas

Complete installations for the processing of crude oil, natural gas, LPG, condensate, formation water and compression of gas

Petrochemical and chemical industry

Installations for transmitting and compressing natural gas, synthesis gas, gas ammonia, nitrogen and others

Packaging of gas compressors

Compressors with complete equipment, i.e.: drive unit – electric, gas engine or gas turbine coupling, separators, pulsation bottles, coolers lubrication, fuel and control systems acoustic enclosure and other elements



Torpol Oil&Gas

What Can We Do For You?

Engineering

Comprehensive engineering across all branches

Procurement

Based on own or external design

Construction

We possess our own resources enabling construction of technological installations

Gas compressors/packaging

We work hand in hand with gas compressor manufacturers and distributors to offer the design and packaging of compressors like: piston, rotary screw, rotary vane, centrifugal, axial, vortex

Contact Us



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info@torpoloilgas.pl



Gas Transmission System Operator GAZ-SYSTEM S.A.

is a strategic company, owned entirely by the State Treasury. Supervision over the company is exercised by the Government Plenipotentiary for Strategic Energy Infrastructure.

GAZ-SYSTEM plays a strategic role in the Polish economy. The company is responsible for natural gas transmission, operates major gas pipelines in Poland and the Baltic Pipe undersea gas pipeline, and controls the President Lech Kaczyński LNG Terminal in Świnoujście.

As part of the 2015-2025 investment programme, GAZ-SYSTEM is developing over 2000 km of new gas pipelines in western, southern and eastern parts of Poland. Interconnections with Lithuania and Slovakia have been completed, as well as the design of onshore gas pipelines that will connect the planned FSRU floating terminal in the Gdansk Bay to the national transmission system. The LNG Terminal in Świnoujście is also being expanded, which will increase its regasification capacity by more than half.



Developing infrastructure to enable increased consumption of natural gas as an environmentally-friendly fuel



Fostering decarbonisation by rolling out infrastructure for renewable and low-carbon gases (e.g. hydrogen)



Key integrator and facilitator of market development in Central-Eastern Europe and the Baltic region



Certified gas transmission system operator in Poland



LNG terminal in Świnoujście operated by GAZ-SYSTEM



3W Idea: the future's blueprint

In an ever-evolving world, cooperation and innovation isn't merely a choice - it's our path forward. **The 3W Idea stands at the forefront of this transformation**, spearheading the synergistic union of water, hydrogen, and carbon technologies. As we venture into this transformative age, it's the confluence of these elements that will redefine our tomorrows.

Beyond mere innovation, 3W Idea is sculpting the landscape of the Central and Eastern European (CEE) region, laying the groundwork for what promises to be a global epicentre: The 3W Technology Valley. It's a beacon for visionary minds that dare to dream bigger.



WATER: life essence and more

As a cornerstone of the 3W Idea, water is more than just a life-sustaining resource; it represents the infinite possibilities of sustainable development and innovative solutions.

With climate change altering precipitation patterns and freshwater sources dwindling, focusing on intelligent water management is **not just strategic—it's imperative**.



HYDROGEN: the fuel of tomorrow

When it comes to sustainable energy, hydrogen stands as a beacon of potential. **Clean, efficient, and versatile, hydrogen holds the promise of revolutionising how we power our world.**

As the most abundant element in the universe, its potential as an energy carrier is boundless. In the context of 3W Idea, it embodies the vision of energy independence, efficiency, and environmental stewardship.



CARBON: beyond the element

Often viewed through the lens of its contribution to global warming, carbon's potential as a resource is vast and largely untapped.

From becoming the building block for sustainable materials to its role in creating eco-friendly fuels and chemicals, carbon is experiencing a renaissance. With the 3W Idea initiative, carbon is envisioned as an opportunity, driving innovation and fostering a circular economy.

The convergence of water, hydrogen, and carbon paints a picture of a world where resources are not merely consumed but synergised to spawn solutions greater than the sum of their parts.

They are **synergistic**, with each resource amplifying the potential of the others. Water underpins life and serves as a conduit for clean energy solutions. Hydrogen offers vast green energy capabilities, and carbon is a valuable asset. Together, these resources form a **holistic framework for sustainable innovation and future progress**.

Here, technology intersects with nature, economies are circular, and sustainability isn't just a goal—it's a way of life. This is the promise of the 3W Idea: **a blueprint for a harmonious, prosperous, and resilient future**.

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The 3W Idea in social media:

https://twitter.com/Idea_3w_int

<https://www.facebook.com/idea3W>

<https://www.linkedin.com/company/idea3w/>

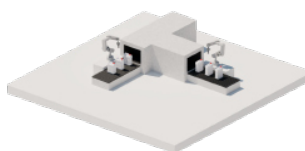
ORLEN Group: the biggest multi-energy company in CEE

Refining



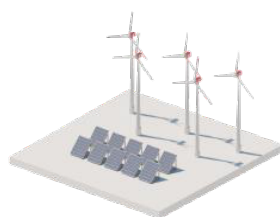
- 7 refineries in Poland, Lithuania and Czechia with max. crude oil throughput of 42,6 mt/y (~ 860 kbd).
- Strategic location of refineries with an access to crude oil pipelines, product pipelines and sea terminals.
- Diversification of crude oil supplies.

Petrochemicals



- Petrochemical assets fully integrated with refining.
- Wide portfolio of petchem products sold to more than 60 countries.

Energy



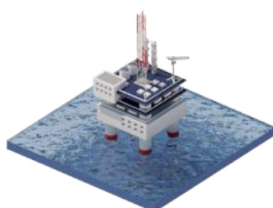
- Installed capacity: 5,6 GWe (electricity) / 13,6 GWt (heat).
- ~ 60% of electricity production comes from zero and low-emission sources (renewables and modern CCGT's).
- > 200 th. km of electricity network
- First offshore wind farm project on the Baltic Sea up to 1,2 GWe in the pipeline.

Retail



- ORLEN – the most recognizable and valuable Polish brand worth ~ PLN 10 bn.
- ~ 3100 fuel stations in 6 countries – the largest retail network in CEE.
- ~ 2500 fuel stations equipped in non-fuel concept.
- ~ 650 alternative fuel points (600 EV chargers, 47 CNG stations and 3 hydrogen stations).
- ~ 9100 pick-up / sending parcels locations in Poland.

Upstream



- Onshore and offshore activities in Poland, Norway, Canada, Pakistan and Lithuania.
- ~ 1280 m boe 2P crude oil and gas reserves.
- ~ 190 k boe/d average hydrocarbon production.

Gas



- The biggest importer and gas supplier for business and households in Poland.
- Long term contracts for LNG supplies.
- Norwegian gas portfolio – own production and supply contracts.
- ~ 3,2 bcm gas storage capacity.
- > 200 th. km of gas distribution network with service lines / 7,4 m customers / ~ 70% coverage of Poland.

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Polish Investment
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PFR Group

