



Canadian Hydrogen Convention 2024

23-25 April, Edmonton, Canada

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Why Poland?



Largest inflow of foreign workers from outside the EU

THE CEE's REGIONAL LEADER

5th
population

in the
EUROPEAN
UNION

37+
mln

CITIZENS

~59
%

of the population at
WORKING
AGE

~9.6
mln

Poles under the
AGE OF 25

504+
thousand

PERMITS
ISSUED FOR
EMPLOYMENT

Statistics Poland

STABLE AND STRONG ECONOMY



6th largest economy

Poland is the sixth largest economy in the European Union, closely behind Germany, France, Italy, Spain and the Netherlands



Unprecedented growth

Highest growth rate in the OECD between 1990 and 2019



Resilient economy

Stable economic growth for the last 30 years
Over 10 years of stable growth in foreign trade turnover



Ratings remain high despite turbulent times

Moody's: A2 | S&P: A- | Fitch: A-

RESISTANT TO CRISIS

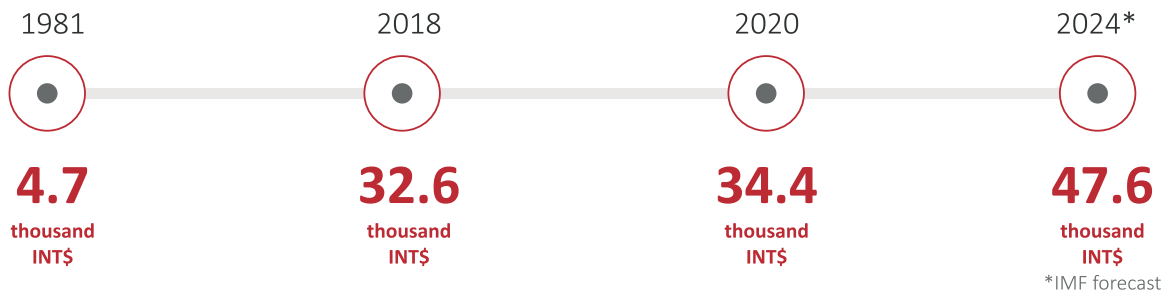
Poland has only experienced a recession once since 1989 – in 2001 – and that one lasted just a few months. It was thanks to a diversified and competitive economy that Poland's GDP growth remained strong – even through the financial crisis of 2008.

Despite turbulence in international markets, Poland's economy is doing well. According to estimates, Poland's GDP in 2022 was almost 5% higher in real terms compared to 2021.

MACROECONOMIC CERTAINTY

Poland is considered to be one of the most economically stable and fastest developing countries in the world.

GDP PER CAPITA (current prices, PPP INT\$- international dollars)



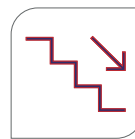
GDP Growth 2013-2022 (constant prices)
(CAGR- compound annual growth rate)



+4.02%
annually

According to International Monetary Fund

The unemployment rate is one of the lowest in more than 30 years:



5.0%
July 2023

According to Statistics Poland

GENERAL GOVERNMENT GROSS DEBT (% of GDP)



According to International Monetary Fund

LARGE, HIGH-QUALITY TALENT POOL

300k+ of well-educated graduates annually
Academic Hub with over 1.2 million students
350k of well-educated graduates annually
20% engineering | technical majors



~23%

of total Poland's population
with higher education

Incentives in Poland highest levels in the EU:



CIT exemption,
between 10 and 15 years
tax free in whole of Poland



Cash grants
for strategic projects



Real Estate Tax
exemption in many
municipalities



IP BOX 5% tax rate for income
generated from intellectual
property rights, one of the
lowest of all developed countries



R&D Tax Relief
up to 200% of expenses
may be deducted from
the tax base

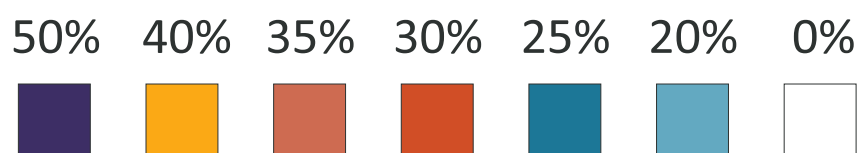
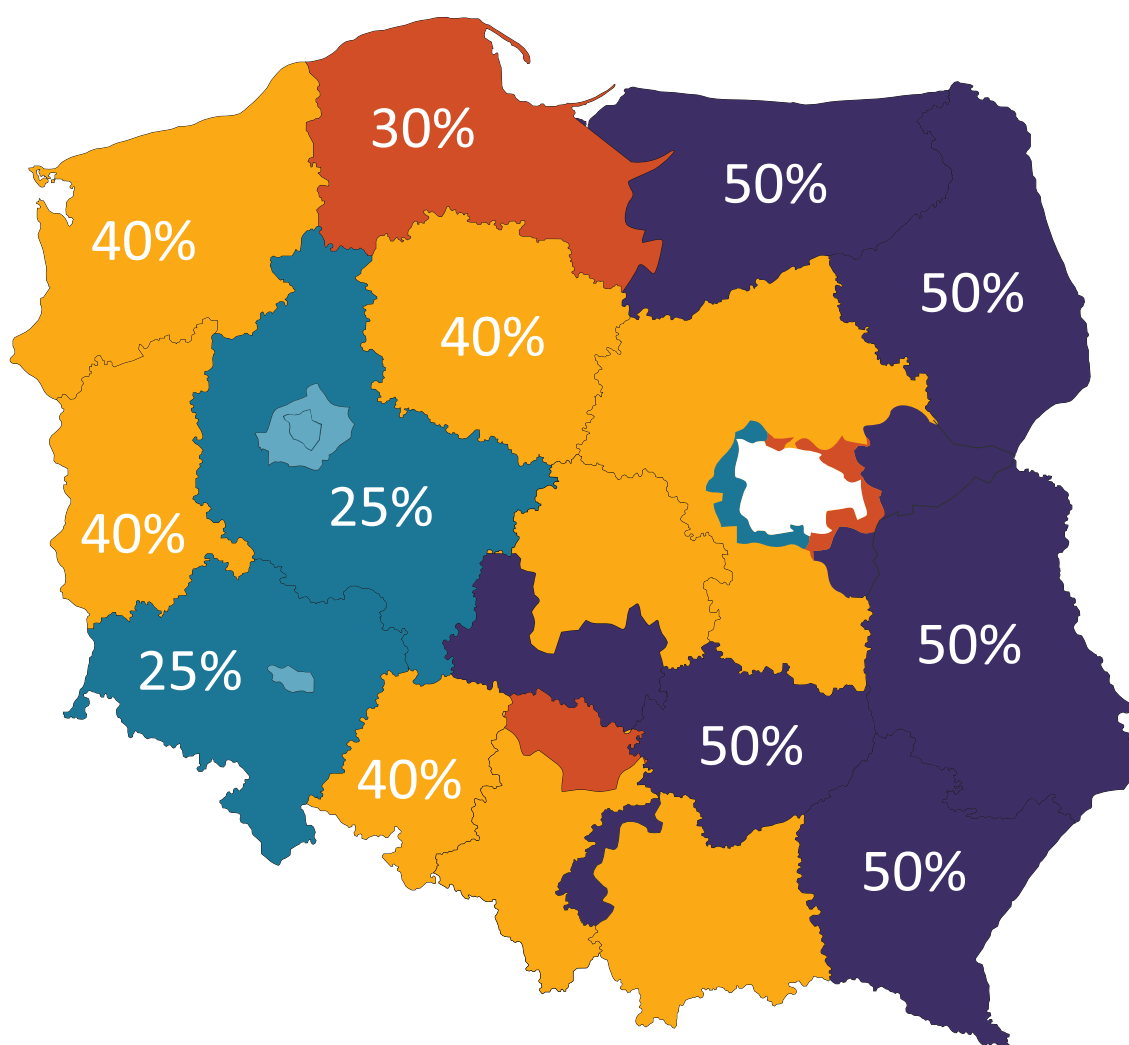


EU funds – incentives for
innovative projects, research
and development, for low-carbon
solutions



Other reliefs: prototype tax relief (30% of additional deduction from tax base), robotization tax relief (costs of purchase or leasing of new industrial robots used in the production process), lump sum CIT (dedicated to companies and partnerships held by investors being natural person)

Maximum levels of support for 2022-2027 in different regions in Poland:



For more information scan the QR Code and go to „Doing Business in Poland” guidebook:

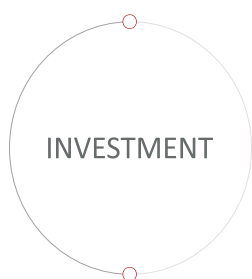


Key areas of Polish Investment and Trade Agency



Supporting Polish Exports with particular emphasis on SMEs. Only in the first half of 2023, with PAIH support:

1. 333 export contracts signed, worth over 25 mln. EUR
2. 4721 Polish and 1426 foreign clients supported
3. Over 2600 B2B meetings organized



Facilitating investments in Poland and abroad
Support of FDI in Poland

1. 25+ years of service for foreign investors looking to invest in Poland
2. 1000+ total projects completed in Poland
3. 30 bln. EUR total estimated projects value, pledged to create over 250 thous. new workplaces



Cooperation with public administration and business environment institutions in the implementation

Where Can You Find Us?

Network of Foreign Trade Offices (ZBH)





Polish Business
Partners

COMPANY NAME: **Advanced Energy Transition Advisory**



AETA

Advanced Energy
Transition Advisory

WEBSITE: www.aeta.pl

PRODUCTS : Technical feasibility studies for heavy-duty vehicles & infrastructure (H2+batteries Project coordination / management Smart diagnostics & predictive maintenance devices for electric & H2 vehicles & infrastructure (over 5000 installed devices with partners) Aftersales & maintenance & EPC works Business development.

CERTIFICATES: Electrical qualification certificates, inclusive leadership, business communication, sales & customer relationship management, creative skills for innovation.



AETA was established in 2022 as a continuation of a professional experience earned in the previous years in various engineering and managerial roles. I worked for Solaris Bus & Coach (PL), EATON (CZ & US), Durapower (SG) and I worked with companies from USA, Canada, Japan, Spain, Netherlands, Poland. Most of my projects focused so far on heavy-duty fleets electrification (diesel fleet conversion into electric/hydrogen) feasibility studies and system design- buses, trucks, coaches, non-road mobile machinery and marine sector. In recent months I performed some feasibility studies for infrastructure (smart grids, ESS + PV + wind + H2 electrolysers), with implementations for 2025+.

COMPANY NAME: **AGH University of Krakow**



WEBSITE: www.agh.edu.pl

PRODUCTS : Higher Education, Research and Development.

CERTIFICATES: N/A



Higher education, research and development (CCS, underground hydrogen storage).

COMPANY NAME: **EcoEnergyH2**



EcoEnergyH2

WEBSITE: www.ecoenergyh2.pl

PRODUCTS : Underground warehouses in salt caverns/gas-hydrogen urban cogeneration plant/production of green hydrogen through electrolysis of water from Baltic offshore renewable energy sources/terminal for LH2 and NH3 importation, their regasification and conversion to H2/rail distribution of H2 and ship bunkering and refueling station/transmission- hydrogen pipeline.

CERTIFICATES: Concession from the Ministry of Climate and Environment for the exploration of rock salt deposit in the salt dome, in the area of Świnoujście city (Wolin island), and a contract for its mining use. A submitted application for obtaining a concession for the exploration of rock salt deposit in the salt dome, in the area of the Szczecin Lagoon.



The company EcoEnergyH2 Sp. z o.o. operates as a startup aiming to create in one place - the town and port of Świnoujście - in the West Pomeranian Voivodeship of Poland, a regional hub for the development of hydrogen energy as the EcoEnergyH2 Hydrogen Energy Complex, within the framework of a targeted investment, namely a business project aimed at developing and implementing, on the principles of sustainable development, a decarbonized, low and zero-emission economy, as a synergy of industrial hydrogen technology chains.

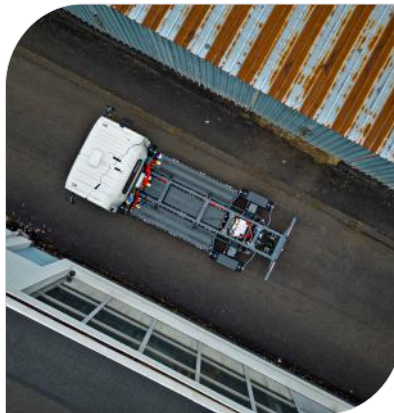
COMPANY NAME: **Ennovation Technology**



WEBSITE: www.ennovationtech.eu

PRODUCTS : Electric motors lithium-ion batteries; vehicle controllers, charging controllers; Battery Management Systems (BMS), battery cooling systems; onboard chargers, integration of drive systems; conversion of combustion engine vehicles to electric /hydrogen; homologation testing.

CERTIFICATES: ISO 9001.



As Ennovation Technology, we provide complete electric drive systems and battery systems for trucks, buses, construction machinery, and boats. We design and manufacture drives, batteries, controllers, electronic components, and power electronics. We offer solutions for both battery-electric vehicles and fuel cell-powered vehicles. We provide full drive integration and support in the homologation process. We have ready-made drive kits, as well as design solutions from scratch for individual orders. We also perform conversions of combustion engine vehicles and machinery to electric ones, where we replace the combustion drive with a battery-electric or fuel cell electric drive.

COMPANY NAME: **HydrogenTech**

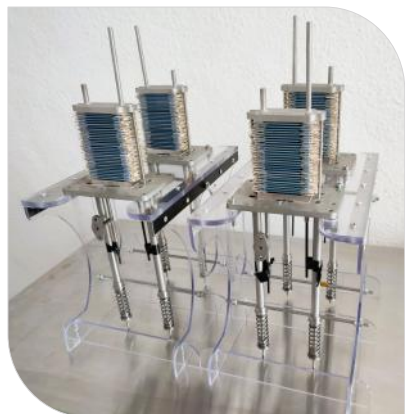


WEBSITE: www.hydrogentech.pl

PRODUCTS : Innovative DFC solid oxide fuel cells and their stacks- patented in many countries, double sided active layers, fully ceramic, easier to seal, better suited thermal expansion coefficients, lower thermal capacity – quicker startup; design and construction of advanced hydrogen systems; modular hydrogen laboratories.

CERTIFICATES:

- The design of a stack is protected by the worldwide patents: USA Patent US 8,778,550B2, Polish PL 220309B1, European EP 2722915B1,
- fuel cells is protected by: US 8968959, GB 2484434, DE 112010002963, RU 2502158, PL PAT.21334.
- Product awards at International Invention Fairs: Paris, Cracow, Kielce, Taipei.



Founded in 2018, HydrogenTech is a research and development startup located in Krakow. We are engaged in the production, development and commercialization of world innovative solid oxide fuel cells, stacks and their systems. Our team has experience to carry out work in hydrogen consulting, integration of hydrogen systems and fuel demand assessment. We have production and test laboratories developed by the our team for testing fuel cell stacks and electrolysis and other hydrogen technology. In the coming years (2025/27), we plan to launch the first SOFC fuel cell factory in Poland with a capacity of 5MW/y. Our financial guarantor are the funds: Black Forest SICAV-SIF and EC Business Creation.

COMPANY NAME: **Malopolska Centre of Innovative Technologies for Hydrogen Storage and Transport**



WEBSITE: www.mch2.pl

PRODUCTS : in process

CERTIFICATES: N/A



The Malopolska Centre of Innovative Hydrogen Storage Technologies is designed to integrate actors from business, science, business support institutions and administration to support and develop hydrogen technologies in Malopolska. The centre focuses on hydrogen storage technologies, as this is an essential part of the hydrogen value chain. The centre is intended not only to integrate and network, but also to support local entrepreneurs who want to develop hydrogen technologies or technologies that are part of a wide-ranging hydrogen value chain.

COMPANY NAME: **Malopolska Province Marshalls Office
- MCH2**



WEBSITE: www.mch2.pl

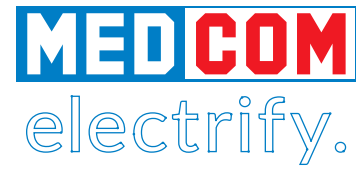
PRODUCTS : Hydrogen storage

CERTIFICATES: N/A



The Małopolska Centre for Innovative Hydrogen Storage Technologies is an initiative that is intended to integrate actors from business, science, business support institutions and administration in supporting and developing hydrogen technologies in Małopolska. The centre intends to support local entrepreneurs who want to develop hydrogen technologies or technologies that are part of the hydrogen value chain.

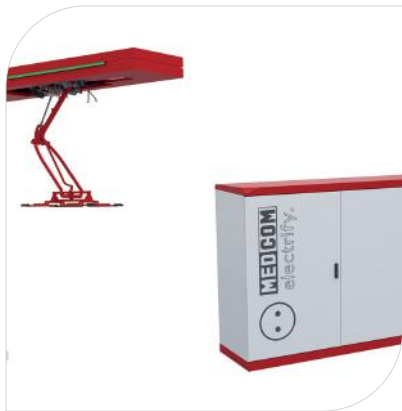
COMPANY NAME: **MEDCOM Sp. z o.o.**



WEBSITE: www.medcom.com.pl

PRODUCTS : FCEC-2x100_Fuell_Cell_Energy_Converter;
EBC-120S-2 SiC_Battery_Chargers_for_eBuses;
EBC-B-150S SiC V2G_Battery_Chargers_for_eBuses;
EBC-250SP_Battery_Chargers_for_eBuses.

CERTIFICATES: IRIS, ISO.



Design, manufacture and after-sales service of power electronics in the full SiC technology, dedicated to public transportation vehicles such as rail vehicles (electric & hydrogen), trolleybuses, eBuses, including propulsion inverters, auxiliary power supply, FCEC converters, battery and supercapacitor energy recovery systems, battery chargers, charging stations & systems. Track record includes over 5 000 systems for Trams, LRVs, eBuses and Trolleybuses, as well as over 3 000 systems for Railcars operating in 40+ countries on 6 continents.

COMPANY NAME: **mPOWER GREEN TECH**



WEBSITE: www.mPowerGreenTech.com
www.mpowergt.com

PRODUCTS : Green H₂ from a full range of waste biomass at Methane conversion to syngas and then to H₂ via water gas shift Dispersed production of electricity & heat in mobile CHP Containers SynGen Reactor – cold-plasma, catalytic reactor for reforming/converting carbonaceous pollutants to clean syngas (H₂/CO).

CERTIFICATES:

1. Patent Convention Treaty - positive review of the Int'l Patent Application for the SynGen (cold plasma/catalytic) Reactor.
2. Patent Convention Treaty - positive review of the Int'l Patent Application for the compact, horizontal, cross-draft Pyrogasifier.



mPower is a Polish-Canadian-owned company with a lab near Warsaw. Its science team has developed breakthrough technology reducing CHP power plants by 90% to fit in mobile 20-foot containers for on-site production of green power or Green Hydrogen from a full range of waste biomass. Mobility makes the leasing model possible. On-site power or H₂ generation means lower CO₂ & transport costs and less risk from cyber attacks. Polish and Canadian government grants helped advance the prototype to full 3rd-party testing validation. mPower has developed relationships with companies worldwide with biomass waste potential and demand for green power or H₂. Co-investment, licensing models are possible.

COMPANY NAME: **PESA Bydgoszcz S.A.**



WEBSITE: www.pesa.pl

PRODUCTS : The production of zero-emission vehicles, including hydrogen-powered locomotives and passenger trains, is the key element of the "Green Pesa" strategy, which assumes the maximum reduction of the carbon footprint both, in the production and operation of rail vehicles.

CERTIFICATES:

- ISO 9001:2015
- ISO 14001:2015
- ISOTS 22163:2017
- ISOTS 22163:2017
- DIN 6701
- EN 15085-2 CL11 in the field of D,P,M,S.



PESA is the largest rolling stock manufacturer in Poland. It employs nearly 4 thousand employees in its plants in Bydgoszcz and Mińsk Mazowiecki, and it cooperates with more than 1,500 companies with the total of several dozen thousand employees. PESA trains and trams run in all Polish regions and most large cities as well as in over a dozen European countries. PESA trams are used, among others, by the inhabitants of Warsaw, Wrocław, Gdansk, Krakow, Kiev, Sofia, Seged, Cluj and Iasi. Our vehicles carry passengers of e.g. German DB Railways, Italian Trenitalia, Czeskie Drahy or PKP Intercity.

COMPANY NAME: **Polish Composite Technologies Cluster
- MCH2**



WEBSITE: www.wodorowe.info

PRODUCTS : High-pressure hydrogen storage tanks design, Production, Tests and Certyfication, Hydrogen transport systems; Hydrogen infrastructure integration services. Safety and regulatory compliance consultancy. Portal about hydrogen technology and Virtual Trade Fairs and Conferences.

CERTIFICATES: N/A



Małopolskie Centre for Innovative Hydrogen Storage and Transportation Technologies Sp. z o. o (MCH2) is a pioneering company based in the Malopolska region, dedicated to advancing the field of hydrogen energy. Specializing in innovative solutions for the storage and transport of hydrogen, MCH2 focuses on developing efficient, safe, and sustainable technologies. Their mission is to contribute to the energy transition by promoting hydrogen as a key element in achieving carbon neutrality. MCH2 collaborates with research institutions and industry partners to bring cutting-edge hydrogen technologies to market, addressing challenges such as high-pressure tank design, testing and certification.

COMPANY NAME: **Polish Geological Institute
- National Research Institute**



WEBSITE: www.pgi.gov.pl

PRODUCTS : Our key activities cover three areas:

- ENERGY,
- RAW MATERIALS
- and the ENVIRONMENT.

CERTIFICATES: N/A



The Polish Geological Institute - National Research Institute (PPG-NRI) is one of the oldest nationwide scientific institutes in Poland. Thanks to the Institute's research, the most important mineral deposits- copper, silver, native sulphur, hard coal, lignite, rock salt, potassium salts, iron ore, titanium, vanadium, zinc, lead - were discovered in the country. Our priority is also to comprehensively disseminate geological knowledge using various information channels. We collaborate with geological centres from dozens of countries around the world.

COMPANY NAME: **SIMPLE H2**



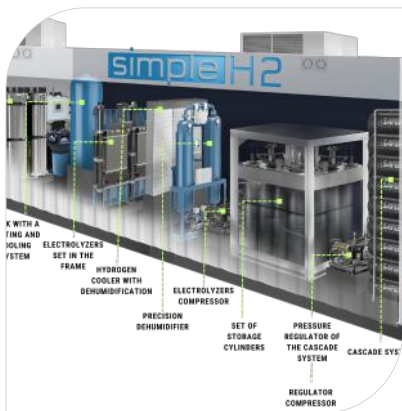
WEBSITE: www.simpleh2.com

PRODUCTS :

- PEM Electrolyzers
- Energy Storage Systems based on Electrolyzers and Fuel Cells
- Power Generators with Hydrogen Storage
- Green Hydrogen Refueling Stations
- Customized Hydrogen Solutions
- Fueling stations.

CERTIFICATES:

SIMPLE H2 is in the process of implementing quality standards in manufacturing facility.



SIMPLE H2, the first Polish manufacturer of PEM electrolyzers, is leading the revolution in sustainable hydrogen production. Operating without external financing, the company showcases self-sufficiency, boasting 100% Polish capital. With sales representatives in the USA and India, and recent recognition at CES Las Vegas, the company is poised for global expansion. Engaging in discussions with the UAE and the USA regarding the opening of local facilities signals their commitment to mass production. The entity has initiated R&D activities this year on proprietary fuel cells, which it plans to implement into production next year, along with hydrogen storage tanks.

COMPANY NAME: **Warsaw University of Technology**



WEBSITE: www.pw.edu.pl

PRODUCTS : Molten Carbonate Fuel Cells

CERTIFICATES: Warsaw University of Technology (WUT) is actively involved in hydrogen technology through various departments like the Faculty of Power and Aeronautical Engineering, Faculty of Chemistry, Faculty of Electrical Engineering, and Faculty of Automotive and Construction Machinery. Their work includes advancements in Molten.



Warsaw University of Technology (WUT) is actively involved in hydrogen technology research, particularly within its Faculty of Power and Aeronautical Engineering. This involvement includes working on molten carbonate fuel cells and proton-conducting solid oxide fuel cell/electrolysis. WUT's research encompasses a range of national and international projects, underscoring their broad engagement in hydrogen and fuel cell technology. Additionally, WUT has signed a cooperation agreement with Alstom, a global leader in sustainable mobility.

COMPANY NAME: **WindTAK**



WEBSITE: www.windtak.ca

PRODUCTS :

1. Product vortex generators: passive aerodynamic technology that improves the efficiency of wind turbines by up to 5%.
2. Product 5GVG by WindTAK: system of aerodynamic sensors, 5G/IoT gateway and cloud-based algorithms using machine learning and digital twin to reduce operational costs and lower the LCOE by up to 7%.

CERTIFICATES: N/A



WindTAK is a manufacturer of 5GVG by WindTAK technology, which improves the energy efficiency and reduces the operating costs of existing onshore wind farms. The company uses a combination of aerodynamic science, proprietary IoT devices and the latest advances in digital twin and machine learning technologies. The company has a presence in CEE, the USA and Canada, where it has a subsidiary, WindTAK Canada Inc. since 2022. Currently, the company is expanding its operations on Northern American market and actively seeks for business development opportunities as well partnerships.

The Polish Investment and Trade Agency

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