



MAE

Mazowiecka Agencja
Energetyczna



Hydrogen in Poland's Energy Transition and Circular Economy

Mazovia Region as an example of cooperation between the government and regions

Hydrogen's Role in Poland's Energy Transition

Hydrogen is a critical enabler in Poland's energy transition, supporting decarbonization across hard-to-electrify sectors such as **industry, transport, and heating**.

Poland aims to develop a hydrogen value chain encompassing production, distribution, and end use, with targets to install **at least 2 GW of low-carbon hydrogen capacity by 2030**.

Comparison of production and consumption figures showed **a potential deficit in domestic production** relative to potential demand (0.8 million tonnes in 2030 to 1.4 million tonnes in 2040).

Poland's strategic shift

- from conceptual planning to enforceable implementation

The Energy Policy of Poland until 2040 (PEP2040)

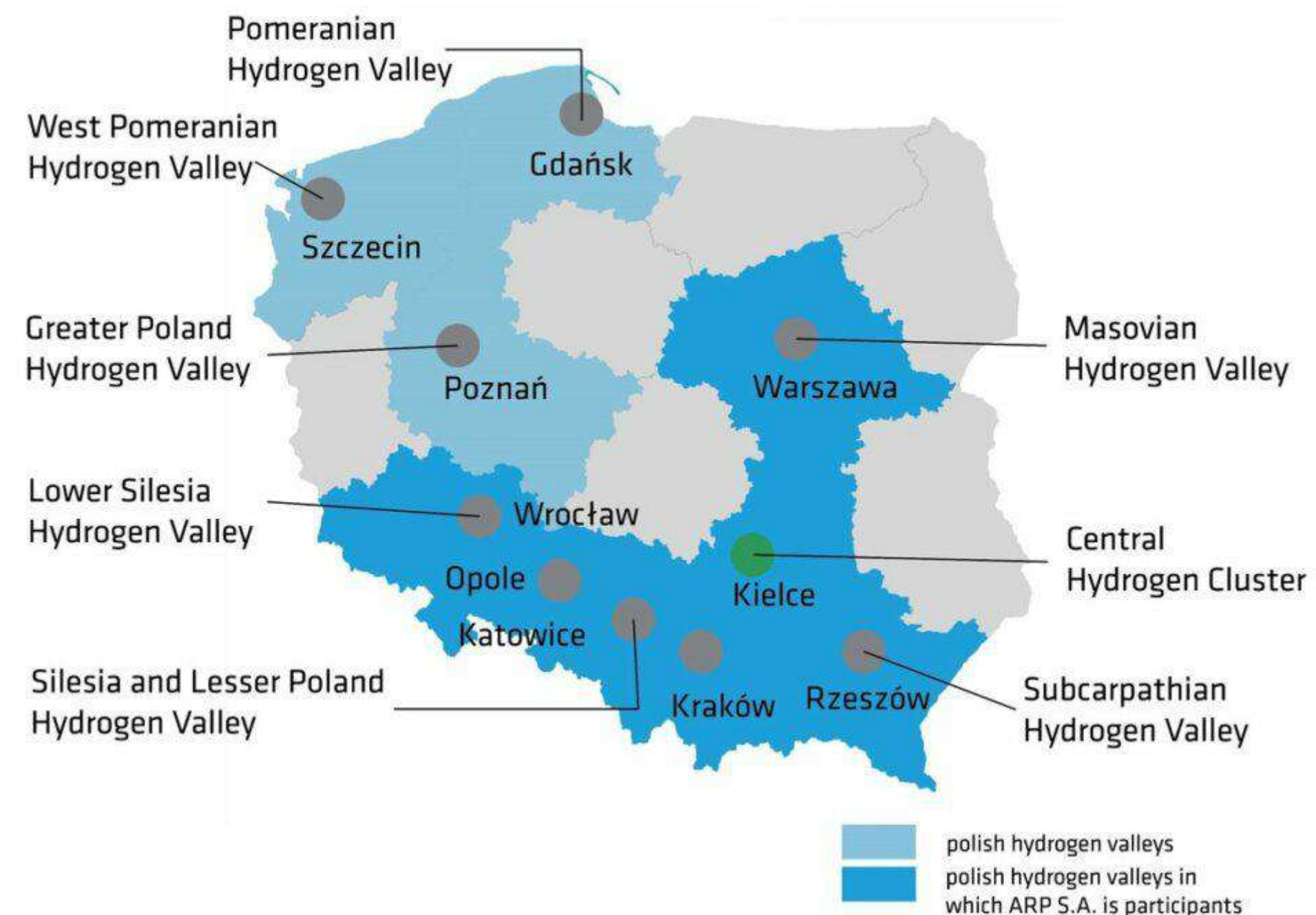
- aims to coordinate cross-sectoral policies ensuring that hydrogen production, infrastructure development, and regulatory instruments align smoothly with overall energy system modernization.

Polish Hydrogen Strategy until 2030 with an outlook to 2040

- sets concrete targets, such as deploying 2 GW of hydrogen capacity by 2030 and establishing **hydrogen valleys as regional innovation ecosystems**,
- prioritizes cross-sectoral integration, industrial decarbonization, sustainable transport, and energy system flexibility through power-to-gas.

Grounded in the January 2025 **amendments to the Energy Law** provide dedicated legal definitions, regulatory structures for renewable and low-carbon hydrogen, frameworks for hydrogen production, storage, transmission, and distribution.

Polish Hydrogen Valleys



Source: Agencja Rozwoju Przemysłu (Industrial Development Agency)

Funding landscape of hydrogen projects in Poland

The Polish Hydrogen Strategy to 2030 with an Outlook to 2040 envisages approximately PLN 11 billion for hydrogen development, divided into two phases: PLN 983 million by 2025, and PLN 10.8 billion by 2030.

Eleven financing mechanisms combine national and European funds, primarily coordinated through the **National Fund for Environmental Protection and Water Management (NFOŚiGW)** programs such as Green Public Transport and Hydrogenisation of the Economy.

The National Centre for Research and Development dedicates PLN 141.2 million to “Technologies for the production and use of hydrogen” under its ‘New Technologies for Energy’ programme (up to 85% loans, with possible principal reduction premiums).

The dedicated part of **the European Funds for Mazovia 2021-2027** focuses on supporting the development of clean, efficient, and accessible urban transport, with its allocation of approximately EUR 380 million (including national co-financing).

The National Reconstruction Plan (KPO), allocating EUR 800 million (~PLN 3.8 billion), covering 35% of the strategy’s total budget; it supports production capacity growth and practical hydrogen use in multiple sectors.

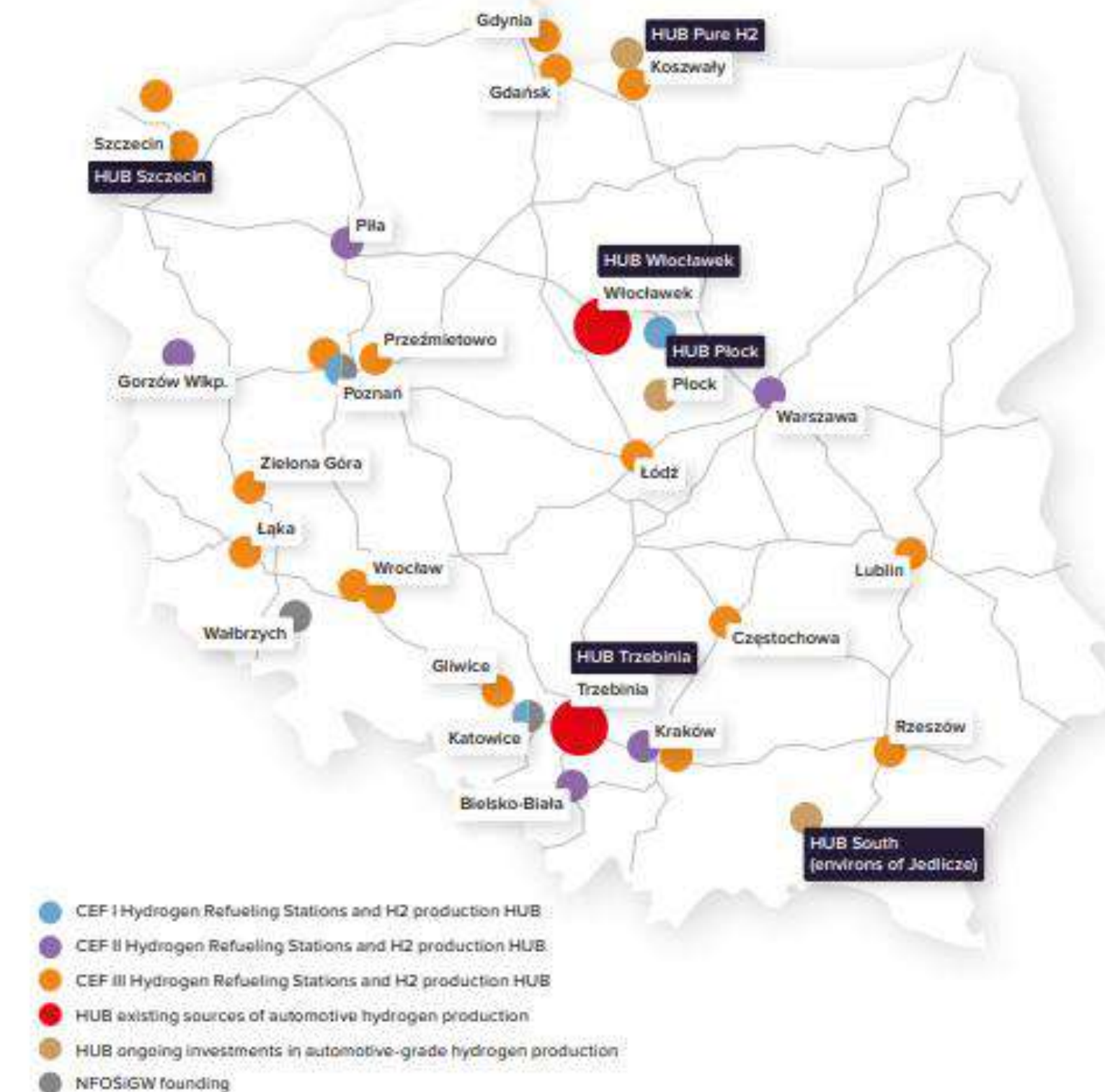
Important Projects of Common European Interest (IPCEI) as the EU framework for cross-border, large-scale innovations, including hydrogen valleys and infrastructure involving Polish and EU partners.

Polish Hydrogen Mobility in numbers

Key indicators:

- 4 renewable hydrogen production installations;
- 108 Fuel Cell Electric Buses, 530 Fuel Cell Electric Cars;
- 10 Hydrogen Refuelling Stations (HRS) publicly accessible and operational;
- 2 laboratories with accreditation for advanced automotive grade hydrogen testing methods operated by ORLEN Laboratorium;
- PLN 2.117 billion (approx. EUR 498 million) in non-repayable loans provided by BGK (Poland's development bank) to five domestic companies for green hydrogen projects (total capacity of 343 MW);

Clean Cities (Phase I, II & III) Hydrogen mobility in Poland



Source: Hydrogen Projects Portfolio - ORLEN 2025

Hydrogen Ecosystem in Mazovia Region

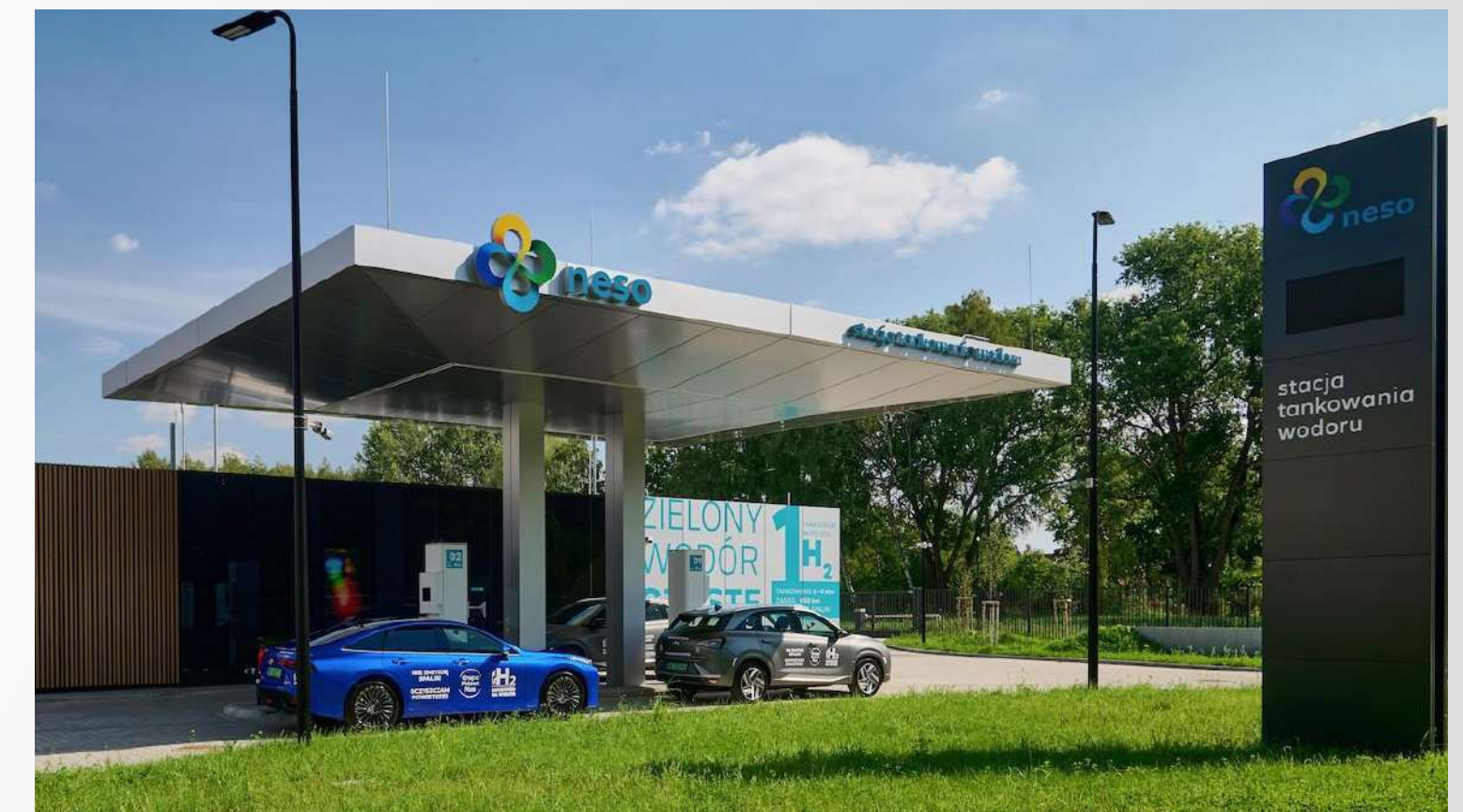
Mazovia Hydrogen Valley (MH2V), founded by Orlen S.A., serves as integrated regional hub combining hydrogen production, storage, distribution, R&D, and workforce development to accelerate hydrogen market deployment and industrial decarbonization in the region.



The HySPARK Project funded by the Clean Hydrogen Partnership (JU), it aims to establish a replicable hydrogen ecosystem in central Poland by deploying a full hydrogen value chain including production, refueling infrastructure, and innovative vehicles (buses, trucks, ground handling) to decarbonize transport.



The "Wodorowy Płock" project is a municipal initiative aiming to introduce zero-emission hydrogen-powered buses and supporting infrastructure in Płock, in partnership with Orlen, as part of the city's broader commitment to clean public transport.



The first publicly accessible hydrogen refuelling station in Warsaw, built by Polsat Plus Group and ZE PAK under the NESO brand, offers fast, zero-emission refuelling for both hydrogen cars (700 bar) and buses (350 bar), is fully self-service, and marks a major milestone in Poland's green transport transition.

HyEfRe - Hydrogen integration for efficient renewable energy systems

The HyEfRe project establishes green hydrogen ecosystems in eight regions of Central Europe, including Mazovia, by fostering investment-friendly conditions and new models for evaluating regional hydrogen potential.

A key focus is the development and pilot deployment of **local energy cells** that integrate renewable energy sources and hydrogen technologies, creating **decentralized systems for efficient energy production, storage, and use at community or industrial scale.**

The project also delivers action plans and technical tools to reduce regulatory barriers and promote the rollout of **local energy cells, aiming to support the broader transition to climate-neutral, sector-coupled energy systems.**

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Przykładowa nazwa nagłówka

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