

GAZ-SYSTEM FORUM

2024

**GAZ-SYSTEM in progress
towards energy transition**



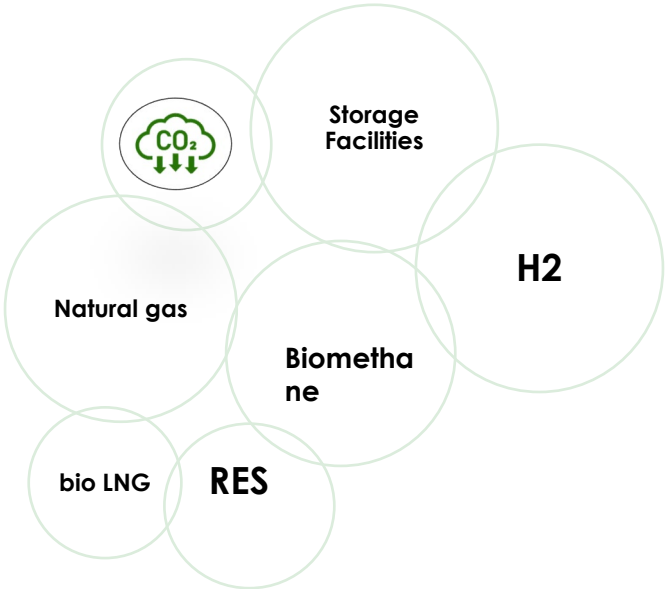
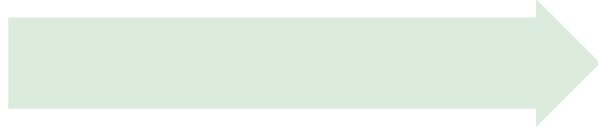
FUNDAMENTALS OF ENERGY TRANSITION



EU Energy Transition Guidelines:

- ✓ **13% increase in energy efficiency by 2030.**
- ✓ **45% increase in the share of RES by 2030.**
 - **420 GW of wind power by 2030.**
 - **Commissioning of over 320 GW of solar power by 2025 and almost 600 GW by 2030.**
- ✓ **Hydrogen market development - commissioning of min. 40 GW electrolysers producing up to 10 million tons of green hydrogen**
- ✓ **Planned installation of over 200 GW and 600 GW of energy storage capacity by 2030 and 2050 respectively**
- ✓ **Production of 35 bcm of biomethane by 2030.**
- ✓ **Reducing dependence on gas supplies from Russia by 2027** and increase in imports of:
 - **LNG - by 50 bcm**
 - **Natural gas transported by pipeline - by 10 bcm**





**Diversification of natural gas supply routes
and security of natural gas transmission
system**

**Energy security and creation of a solid
foundation for energy transition**

The role of GAZ-SYSTEM in energy transition

Ensuring adequate levels of supply and diversification of sources to meet the demand for natural gas as a bridge fuel in the energy transition process

Maintaining the highest level of network operation as well as ensuring physical and cyber security to the system

Developing the hydrogen market - building dedicated infrastructure to transport clean hydrogen across the country and within the EU

Adapting selected elements of the existing infrastructure for the transmission of pure hydrogen

Decarbonisation of transmission infrastructure by enabling transmission of biomethane

Greening own operations by improving the energy efficiency of technological processes (e.g. through RES, biomethane supply)

Maximising efforts to reduce greenhouse gas emissions across the entire value chain

Engaging in decarbonisation initiatives at national and EU level (CCUS/CCS)

HYDROGEN AND GAS MARKET DECARBONISATION PACKAGE

Regulation of the European Parliament and of the Council (EU) 2024/1789 of 13 June 2024 on the internal markets for renewable gas, natural gas and hydrogen

Directive (EU) 2024/1788 of the European Parliament and of the Council of 13 June 2024 on common rules for internal markets in renewable gas, natural gas and hydrogen



AMENDMENT TO THE RULES REGULATING THE NATURAL GAS INFRASTRUCTURE AND MARKET



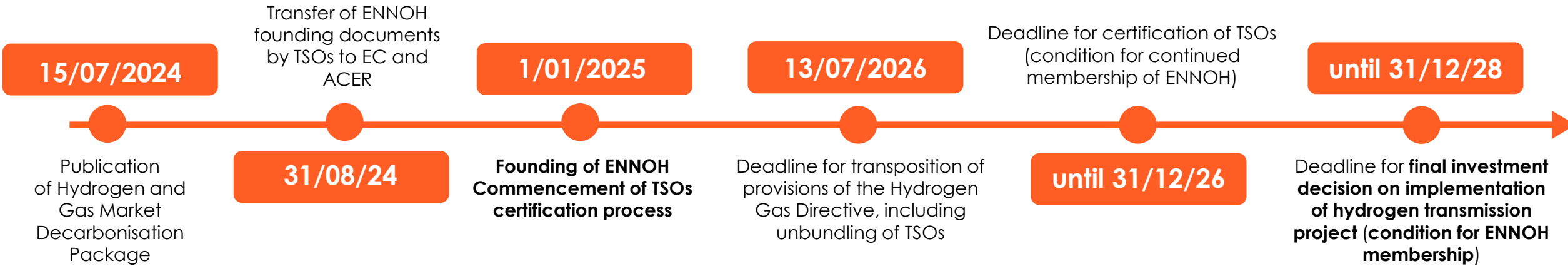
COMMON RULES TO PROMOTE THE DECARBONISATION OF NATURAL GAS INFRASTRUCTURE THROUGH THE INTEGRATION OF RENEWABLE AND LOW-CARBON GASES



NEW RULES FOR THE CREATION AND FUNCTIONING OF HYDROGEN MARKET AND INFRASTRUCTURE



HYDROGEN AND GAS MARKET DECARBONISATION PACKAGE FOUNDING OF ENNOH AND UNBUNDLING OF TSOs



IMPLEMENTATION OF THE HYDROGEN AND GAS MARKET DECARBONISATION PACKAGE LAW ON HYDROGEN

- The **Regulation** will take direct effect **from 5 February 2025**.
- Member States are required to **implement the directive by 5 August 2026**.
- The Ministry of Climate and Environment is proceeding with **draft amendments to the Energy Law Act**. The proposed solutions are consistent with the new Hydrogen and Gas Market Decarbonisation Package
- **According to the draft law, the following two systems will apply in Poland:**
 - **hydrogen system** – built along the lines of the gas system, formation of hydrogen system operators, unbundling of operation
 - **gas system** – operating as at present, gas system operators will be allowed to operate on the hydrogen market
- **The Act introduces the concept of hydrogen transmission system operator**, hydrogen distribution system operator, hydrogen storage system operator and the **procedure of designating the operators by the President of the ERO**.
- **The Act introduces definitions of various types of hydrogen:**
 - **Low-carbon hydrogen** – can be produced from fossil fuels as long as the production process entails reduction of emission; e.g. hydrogen production with CO₂ capture technology,
 - **Renewable hydrogen** – produced from renewable energy sources,
 - **Renewable hydrogen of non-biological origin (RFNBO)** – hydrogen produced in the process of electrolysis according to EU guidelines.

HYDROGEN MAP OF POLAND



Dialogue with companies interested in hydrogen production, consumption, distribution and storage



Information gathered in a survey will enable the creation of a map depicting hydrogen demand and supply locations and preliminary route of hydrogen pipelines on the territory of Poland in terms of volume, time and coordinates.



Identification of market needs to allow market participants to develop their business activities over the coming years

HYDROGEN MAP OF POLAND

Procedure

A non-binding **market screening** procedure to determine the preliminary hydrogen pipeline routes on the map of Poland based on **reliable market data** collected in the survey.

External factors

- Green energy transition
- implementation of Polish Hydrogen Strategy objectives
- Fuel and energy security of Poland
- Competitive Polish economy

Tool

Questionnaire with open-ended and close-ended questions (answers selected from drop-down lists).

The four main areas of Polish hydrogen economy:

- production
- consumption
- distribution
- storage

Product

Preliminary routes of hydrogen pipelines on the map of Poland to demonstrate:

- volume
- time perspective
- geographic location



HYDROGEN MAP OF POLAND

HMP preliminary results:

- The Hydrogen Map of Poland (WMP) survey ran from 18 April to 30 June 2024.
- A total of **62 questionnaires** returned covered almost **200 projects** in all surveyed market areas: hydrogen production, consumption, distribution and storage.
- Two dedicated **webinars** brought together **200 market operators** representing different industries and therefore different hydrogen needs.
- The verification and analysis of the collected data has been completed.
- **The results of the market screening will be announced in Q4 2024**
- On this basis, a preliminary route of Polish hydrogen transmission network will be developed.
- The HMP will be subject to further analysis towards the **development of a National Ten-Year Development Plan for the hydrogen transmission system.**

THE NORDIC-BALTIC HYDROGEN CORRIDOR

PROJECT OBJECTIVES

- to develop a hydrogen corridor from Finland to Germany via Estonia, Latvia, Lithuania and Poland,
- to harness hydrogen potential in the Eastern Baltic Sea (mainly Finland),
- to develop a national hydrogen network based on the transit corridor,
- to contribute to the decarbonisation of economies in line with REPowerEU objectives.

PROJECT PROMOTERS

- Finland (Gasgrid Finland), Estonia (Elering), Latvia (Conexus), Lithuania (Amber Grid), Poland (GAZ-SYSTEM), Germany (ONTRAS)

PCI PROJECT

- **In 2023, the NBHC was included in the list of PCI projects of key importance for European energy and climate policy** under the 'Baltic Energy Market Interconnection Plan for Hydrogen'.



NORDIC-BALTIC
HYDROGEN
CORRIDOR

NBHC

FINLAND
GASGRID

ESTONIA
elering

LATVIA
conexus

LITHUANIA
Amber
Grid

GERMANY
ONTRAS

POLAND
GAZ
SYSTEM

The exact routing will be defined in further planning process.

THE NORDIC-BALTIC HYDROGEN CORRIDOR

PRE-FEASIBILITY STUDY

- The pre-feasibility study has been completed.
- **The analysis covers the technical, legal, organisational and economic aspects** of the NBHC project.
- **Approx. 27.1 million tons of H₂ by 2040** - estimated potential for renewable hydrogen generation in the Nordic and Baltic Sea region.
- **2.7 million tons H₂/year** - projected cross-border transmission via NBHC by 2040.
- **Preliminary technical assumptions** - approximately 2500 km, DN 1200.

FOLLOW-UP

- **Commencement of a feasibility study**
- Detailed technical, commercial and economic analysis of the project and the NBHC implementation timeframe.

PROJECT INFORMATION



NORDIC-BALTIC
HYDROGEN
CORRIDOR
NBHC

The exact routing will be defined in further planning process.

BEMIP H₂ MOU

MEMORANDUM OF UNDERSTANDING ON THE HYDROGEN COOPERATION IN THE BALTIC SEA REGION

- Signed in June 2024 by nine gas TSOs from the Baltic Sea region.

MOU SIGNATORIES

- GAZ-SYSTEM (Poland), Elering (Estonia), Energinet (Denmark), Gasgrid Vetyverkot (Finland), Amber Grid (Lithuania), Nordion Energi (Sweden), GASCADE and ONTRAS (Germany), Conexus Baltic Grid (Latvia).

OBJECTIVE

- **Coordinating and facilitating the development of hydrogen infrastructure and supporting the development of hydrogen market in the Baltic Sea Region**

ASSUMPTIONS

- Coordinating the activities of gas TSOs in the development of hydrogen transmission and storage infrastructure in the region.
- Sharing information about the developments in hydrogen market and projects related to renewable hydrogen production and demand.
- Cooperation with European and national institutions and market participants.
- Cooperation within the EU initiative 'Baltic Energy Market Interconnection Plan' (BEMIP).



GAZ-SYSTEM actively participates in the development of the biomethane market in Poland through:

Connecting biomethane plants to the transmission network



Implementing the assigned tasks related to the issuing system of guarantees of origin for biomethane

BioLNG



Development of monitoring standards for the quality and parameters of biomethane in the network

Biomethane for own purposes



Cooperation with national DSOs regarding network development planning taking into account biomethane production potential and the flows management model between networks

Active membership in international organisations and industry initiatives
(GIE, BIP)

Active membership in national organisations and industry initiatives
(IGG, POB, Cooperation agreement for the development of the biogas and biomethane sector)

Participation in the legislative process at the EU and national level

Development of guidelines on connecting biomethane plants, communicating with market participants and organisation of dedicated workshops

Cooperation with TSOs of neighbouring countries on the development of biomethane-related industry
(signed cooperation agreements with the Danish operator - ENDK and the Ukrainian operator - GTSOUA)

Participation in the 'GreenMeUp' project of the Polish Economic Chamber of Renewable and Decentralized Energy (PIGEOR)

CCUS/CCS

Achieving ambitious climate targets requires complementing the energy transformation process with **CCUS projects**.

GAZ-SYSTEM's ambitions in the field of CCUS:







- CCUS technology development strategy;
- repurposing - analysis of selected parts of the existing gas transmission infrastructure in terms of its adaptability for CO₂ transport;
- projects related to CO₂ transport.



TAB ON NEW ACTIVITIES

IN THE FIELD OF H2

Hydrogen market

 Hydrogen in a nutshell Hydrogen production technology, transport, and storage.	 Regulatory environment EU and domestic policy to phase out fossil fuels.
 Hydrogen Market Development Analysis of current and future hydrogen transport infrastructure for industrial customers.	 Projects Major projects in the development of infrastructure designed for hydrogen transmission.
 News Hydrogen market highlights.	 Contact details Contact form.



GAZ-SYSTEM FORUM

2024

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