

H2 Background Poland

With production of around 1.3 million tons, Poland is the world's third-largest manufacturer of hydrogen. However, it is not low carbon hydrogen; most of it is grey H₂ produced by refineries and chemical plants. Apart from a few small-scale pilot projects and R&D programmes, there are no functioning systems of green hydrogen production in Poland. The local value chain of hydrogen economy is still at an early stage of development. The existing solutions that could form a part of the future hydrogen economy value chain are at different, often insufficient, levels of technological readiness. Nevertheless, the new regulatory environment and incentives, including dedicated financial instruments, make Poland a very attractive market for investment in hydrogen production and use.

In 2021, the Polish government announced the Polish Hydrogen Strategy by 2030 with an outlook to the year 2040. The strategy covers each part of the value chain of the hydrogen economy: production, distribution, conversion, storage, and use of H₂. It also points out the necessary changes in the legal framework and financing. The strategy sets out the main objectives for the use of H₂ in: (1) the power and heating sector, presently mainly fossil fuelled, (2) transport - public, road, rail and maritime – to reach low carbon transport goals, (3) support of the decarbonisation of the Polish industry. To achieve this objective, at least five hydrogen valleys were to be locally established in Poland, acting as Centres of Expertise for implementation of hydrogen economy.

Currently a new Polish Hydrogen Strategy is under preparation and will be announced this year. It will set out more ambitious goals than the strategy from 2021. According to a study entitled “The Hydrogen Map of Poland” carried out in 2024 by Gaz-System, the Polish TSO for gas fuels, based on a survey that included 178 ongoing hydrogen projects focusing on production, consumption, distribution and storage of H₂, the declared amount of green H₂ production in Poland by 2040 will reach 1.11 million tonnes, while the consumption potential is estimated at 2.62 million tonnes. The gap between the supply and demand of green H₂ will most likely be bridged with import.