China declares hydrogen a key technology for the future



China now accounts for around 50% of global renewable hydrogen capacity. (Source: Vulkan Verlag (AI-generated))

China has officially launched the comprehensive development of a national hydrogen economy. At the 4th Plenary Session of the 20th Central Committee of the Communist Party of China, which took place in Beijing from October 20 to 23, 2025, the leadership classified hydrogen as a key "future technology" for the first time.

This decision marks the start of a major new industrial policy initiative that is comparable in significance to previous support programs for photovoltaics and batteries. It also forms the strategic basis for the 15th Five-Year Plan (2026–2030).

With this new course, China is pursuing the goal of achieving technological breakthroughs on an industrial scale and ensuring a regional supply of renewable or low-carbon hydrogen. To this end, a powerful innovation system and a nationwide infrastructure are to be created.

World leader in production, consumption, and infrastructure

China already occupies a leading position in the global hydrogen sector. According to Liu Deshun, Director General of the Science and Technology Department of the National Energy Administration (NEA), production and consumption together reached 36.5 million tons in 2024—the highest figure worldwide.

The country is also ahead in terms of infrastructure, with more than 560 hydrogen filling stations and over 25,000 fuel cell commercial vehicles in operation. China now accounts for about half of the world's renewable hydrogen production capacity.

In recent years, 27 novel hydrogen technologies have also been identified as "first-of-a-kind" solutions. According to the NEA, the industry is currently in a phase of accelerated expansion thanks to targeted government support.

Around 600 green hydrogen projects in the pipeline

An important step was the inclusion of hydrogen in the national energy law in 2024. This marked the first time that the energy source was officially integrated into state energy policy – a clear signal of its strategic importance. According to forecasts, global demand could rise to several hundred million tons by 2050, with green hydrogen accounting for the largest share.

Lin Boqiang, director of the China Institute for Studies in Energy Policy at Xiamen University, emphasizes the growing role of green hydrogen and green methanol in China's climate goals. Hydrogen is a flexible, low-carbon energy source that, together with other technologies, can drive the development of a new integrated energy system.

By the end of 2024, China had an annual production capacity of more than 50 million tons of hydrogen. Around 600 renewable hydrogen projects are planned nationwide, of which around 100 are already in operation – with a combined capacity of around 220,000 tons per year.

The most important production sites are in the resource-rich regions of northern, northeastern, and northwestern China. By linking hydrogen projects to existing renewable energy clusters, regional potential is to be better exploited, and new growth areas tapped.