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Key Policy Challenges for Hydrogen and Its Derivatives and CCS in 2026
－Efforts and Issues Toward Full-Scale Societal Deployment－
< Summary >

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Current Status and Challenges of Global Hydrogen and Its Derivatives Production Project Development

1. Based on a bottom-up assessment of announced production projects, the outlook for hydrogen and its derivatives production had shown a steady increase up to 2024, reaching approximately 49 million tonnes of hydrogen per year as of 2024. However, a series of project cancellations and delays has since led to a downward revision, with the current estimate declining to around 37 million tonnes of hydrogen per year.
2. At the same time, particularly in Europe, policy support and institutional frameworks have continued to advance, and global production volumes of hydrogen and its derivatives, as well as the amount of committed investment, are increasing overall. At present, investment decisions are primarily driven by the replacement of existing hydrogen and ammonia demand, such as for fertilizer production and oil refining.
3. While the expansion of hydrogen and its derivatives use—including in hard-to-abate sectors—is expected to remain essential for decarbonization, a gap persists between the current situation, characterized by high costs and a lack of offtakers, and the future vision in which demand expands and costs decline. Bridging this gap will require appropriate policy support and market design that can serve as a transitional mechanism.

Developments in Domestic Hydrogen and Its Derivatives Policy in 2025 and Key Focus Areas for 2026

4. Under the Price-Gap Support Scheme, designed to bridge the cost differential with existing competing fuels, two domestic projects were initially selected. One project, led by Toyota Tsusho and Aichi Steel, involves the use of hydrogen as fuel for steel reheating furnaces, with an annual supply of 1,600 tonnes of hydrogen. The other project, led by Resonac and Nippon Shokubai, produces ammonia from hydrogen derived from waste plastics and waste textiles, and manufactures and sells ammonia-derived products for textile feedstocks (20,815 tonnes of ammonia per year, equivalent to 3,234 tonnes of hydrogen per year). The review process for this support scheme remains ongoing, and developments in 2026—including the selection of large-scale projects

involving imported hydrogen and its derivatives—will be closely watched. (Note: Two additional overseas projects were newly selected in mid-December 2025.)

5. In the third round of the Long-Term Decarbonization Power Source Auction, support for hydrogen and ammonia power generation was expanded. Variable costs, including fuel costs, were allowed to be included in bid prices, and the upper price cap was raised to a level that enables project deployment. Projects involving 100% hydrogen firing and 100% ammonia firing were also made eligible.
6. Looking ahead to 2026, key points of attention include the concretization of efforts toward creating an enabling environment for strategic investment and advancing market design that supports the expansion of hydrogen and its derivatives use. In this context, progress and outcomes of selection under Hub Development Support for shared hydrogen infrastructure aimed at building large-scale supply chains will be important. In addition, initiatives to design markets and incentives in which the use of hydrogen and its derivatives generates clear economic value will be critical. Policy support and institutional design to enable the commercialization of hydrogen-based fuels—such as synthetic fuels (e-fuels) and ammonia for maritime use—remain key challenges.

Recent Trends and Outlook for CCS Projects Worldwide

7. Global CO_2 storage volumes have been increasing steadily, reaching approximately 50 million tonnes per year at present. The cumulative storage capacity of projects in operation or under construction has already exceeded 100 million tonnes per year, and this upward trend is expected to continue.
8. Concrete progress has been observed in CCS projects, particularly in Europe. In Norway, the Northern Lights project has announced that CO_2 injection began in August 2025.
9. In the United States, the Environmental Protection Agency (EPA) proposed the abolition of the GHG reporting requirement in September. As EPA GHG reporting is linked to the 45Q tax credit for CCUS under the Inflation Reduction Act (IRA), there are concerns that CO_2 accounting could become less transparent. The future direction of this proposal warrants close attention.

Developments in Japan's CCS Policies in 2025 and Key Issues for 2026

10. As part of Japan's CCS policies, a support scheme for domestic pipeline-based CCS projects has been presented that is based on a Contract-for-Difference (CfD) mechanism. The scheme is designed to cover the difference between a strike price—representing CCS costs, including CAPEX and OPEX—and a reference price, defined as the costs that would be incurred in the absence of CCS, with GX-ETS prices serving as a reference. In addition, in the third Long-term Decarbonized Power Source Auction, thermal power generation with CCS was added as an eligible bidding category.
11. Regarding the progress of CCS in Japan, two designated areas for exploratory drilling have been specified: parts of the offshore areas of Tomakomai, Hokkaido, and offshore Kujukuri, Chiba Prefecture. For advanced CCS support projects involving ship-based transport, support may include

component-by-component support across the value chain. In parallel, further institutional design is advancing with respect to issues required for the implementation of CCS, including monitoring and leakage prevention, future closure measures, and detailed cost-related arrangements.

12. Key issues to watch in 2026 include, in addition to the progress of the above initiatives, developments in cross-border CCS, such as bilateral discussions aligned with the London Protocol and progress toward establishing international frameworks for CO_2 accounting. Further attention is also warranted with regard to efforts aimed at overall cost reduction through infrastructure standardization and optimization of the entire capture–transport–storage value chain.

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