

In this study, we conducted a comprehensive exergy analysis of a defined hydrogen supply chain, focusing on five representative physical and material-based hydrogen storage systems. Additionally, we performed an ...

To create a fully renewable hydrogen economy, new suitable pathways to design cost-effective hydrogen value chains need to be created.

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We analyze inherent energy conversion losses that make hydrogen-based systems less efficient than direct electrification for many applications, along with persistent issues in scalable storage, distribution, ...

Our study shows that a hydrogen supply chain can enlarge the scale of hydrogen production and reduce the cost, improve its efficient and safety, and obtain a stable, sustainable, and zero-emission energy system.

For this vision to materialize, various value chain components, including low-carbon hydrogen production, storage, and distribution infrastructure, must align with demand from hydrogen end-use sectors.

This review provides a comprehensive overview of the key steps and components involved in the value chain of H₂ production, transportation, and storage, which are essential for the transition to a sustainable energy future.

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We carry out techno-economic analyses for Power-to-X production sites and evaluate the value chain for hydrogen and its derivatives from production to storage, transportation, and use.

The hydrogen energy storage system industry chain spans production, compression, storage, transportation, and end-use applications, creating a complex web of interconnected technologies.

We have introduced a new Hydrogen Market Module (HMM) to represent the domestic hydrogen market in the Annual Energy Outlook 2025 (AEO2025). Representing an integrated hydrogen market in the National ...

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