

Outline of the Hydrogen Safety Strategy (Interim report)

Issues and Changes in the Environment Surrounding Hydrogen Safety

(i) Demands for response to climate change issues, etc.
→ Request for the expanded use of hydrogen

Hydrogen supply target
(The 6th Strategic Energy Plan)
2 million t (2022) → 3 million t (2030) →
20 million t (2050)

(ii) Advances in hydrogen utilization technology

The range of uses is rapidly expanding, such as power generation by hydrogen co-firing and mobility fuels other than for FCVs.

(iii) Integration of different types of business (electric power, gas, etc.), the involvement of various actors

(Devolve into new applications such as drones and general consumer uses)

(iv) Demands for Safe Use

(Demands for the safety of consumers and local residents as the use of hydrogen expands)

(v) Trends in major countries: Issues at each stage of the hydrogen value chain are being addressed

*IEA policy recommendations (Global Hydrogen Review 2021): Recommends regular market monitoring with gradual and dynamic initiatives, taking the stages of development of the hydrogen market into account

Basic Approach to Developing a Hydrogen Safety Strategy

- Based on the premise of developing large-scale hydrogen utilization, in order to build an environment that encourages hydrogen utilization, including the rationalization and optimization of regulations, it is essential to promote technological development, etc., and provide scientific data, etc., that support new utilization needs in terms of safety.
- The public and private sectors will work together to create a timely, economically rational and appropriate hydrogen utilization environment by thoroughly pursuing the acquisition of scientific data, etc., to support safety assurance, while disseminating Japan's technical standards domestically and internationally in order to create a seamless safety environment, aiming for globally harmonized rulemaking.

Objectives of the Hydrogen Safety Strategy and Three Courses of Action

- With the world's most advanced Japanese hydrogen technology, we will work on the following three courses of action and nine concrete means to realize a hydrogen society and provide society with a safe and secure utilization environment.

1. Efforts based on scientific data and evidence through technology development

- (i) Strategic acquisition of scientific data and sharing of data related to shared areas
- ✓ Through state-of-the-art technology development projects that utilize the national budget, we will strategically acquire scientific data that will contribute to the formulation of safety standards
 - ✓ At the end of the demonstration, the acquired scientific data on safety, etc., will be shared between the public and private sectors in principle, as they fall under the shared area.
 - ✓ Actively share knowledge related to the handling of hydrogen (safety measures, preventive measures for accidents, outline and causes of accidents, measures to prevent recurrence, etc.) including information and scientific data in shared areas obtained independently by the operators.
- (ii) Realization of a smooth experimental and demonstration environment

2. Rationalization and optimization of rules for the gradual implementation of a hydrogen society

- (iii) Approach to priority areas in the Supply Chain
- ✓ Consumption of hydrogen and ammonia
 - ✓ Timing to start designing for introduction
 - ✓ Policy positioning such as demonstration projects being carried out by project promotion government agencies
- (iv) Clarifying the future pathway
- Technology development and demonstration stage: Prompt response using existing laws and regulations
- Commercialization stage: Permanent measures such as setting new technical standards
- Study of future safety system based on expansion of hydrogen business
- (v) Building and developing third-party certification and inspection bodies
- (vi) Collaboration with local governments

3. Building a hydrogen utilization environment

- (vii) Risk communication
- ✓ Enhance risk communication
 - ✓ Make efforts to disseminate information in an easy-to-understand manner
- (viii) Human resource development
- ✓ Formation of a pool of human resources who will lead the hydrogen society (those who will serve as the foundation for ensuring safety or lead discussions in the field of hydrogen safety in Japan and overseas)
 - ✓ Create a virtuous circle of knowledge in which universities and other institutions become a source of human resource development and advancement
- (ix) Efforts to grasp trends in other countries, harmonize regulations, and establish international standards