



International Partnership
for Hydrogen and Fuel Cells
in the Economy

Republic of Korea Update

42nd IPHE Steering Committee Meeting
20 - 21 November 2024
Brussels, European Commission

Announcements / New Initiatives *Republic of Korea*

• Investments/Funding/Policies/Initiatives

1. Bidding Closed for World's First **Clean Hydrogen Power Market** (November 2024)

- **Clean hydrogen section** ($\leq 4\text{kgCO}_2\text{eq/kgH}_2$, well-to-gate) of Clean Hydrogen Portfolio Standard opened this year
 - 6.5TWh in total (max.) with 15-year contracts b/w power generation companies and Korea Electric Power Corporation
- Winners announced in December are required to generate clean hydrogen electricity by 2028

2. Two **Hydrogen-specialized Complexes** Designated (November 2024)

- To accommodate hydrogen-related companies to form clusters leading hydrogen industry eco-system in Korea
 - Various supports including additional subsidy for eligible companies, incentives on joint R&D projects, etc.
- **Donghae-Samchuk (liquid hydrogen transport & storage)** and **Pohang (fuel cells for power generation)**
 - In total, 510 billion KRW (365 million USD) to be invested ('24 – '28)

• New Research & Development, Demonstration and/or Deployment Activities

1. Government Funding for **New Hydrogen R&D Projects** (May 2024)

- 47.8 billion KRW (34.3 million USD) in 2024: 24.3 billion KRW (17.5 million USD) in 1H, 23.4 billion KRW (16.8 million USD) in 2H
- In 1H 2024, 10 projects selected in AEM electrolyzer, HRS key component upgrades, mobile fuel cell power generation, etc.

2. World's Largest **Hydrogen Liquefaction Plant** in Operation (May 2024)

- Incheon Liquid Hydrogen Plant with annual capacity of 30,000 ton (able to refuel 5,000 FC buses)
- SK E&S invested 700 billion KRW (500 million USD) in it to expand its liquid H₂ refueling station network to 40 locations by 2026
- Liquid hydrogen supply chain is essential for Korea's rapid growing FC bus fleet
 - National and local governments have plans to deploy more than 20 thousand FC buses by 2030

Examples of Lessons Learned and Impact *Korea*

Program initiative, policy, regulation or mandate	Lessons Learned/Outcomes
<ul style="list-style-type: none"> Clean hydrogen section of Clean Hydrogen Portfolio Standard 	<ul style="list-style-type: none"> Demand creation backed by clear policy signal No investment in clean hydrogen supply chain without long-term contracts Mechanism design for price discovery is a very challenging task under great information asymmetry Consideration of impact on electricity price – consumers acceptance of higher electricity price in early stage of hydrogen economy



Republic of Korea – Profile November 2024

Status of Deployments (Latest)

- ✓ Stationary FC: **1,082MW**
- ✓ FCEV: **36,989**
- ✓ FC Bus: **1,244**
- ✓ HRS: **311**

Leading Government Initiatives

Triple-Up* policy package

* Scale-up, Build-up, Level-up

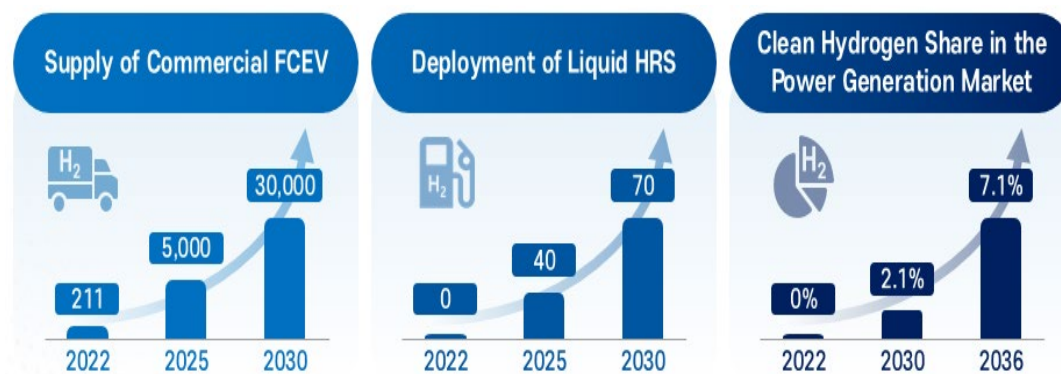
based on

Hydrogen Economy Promotion and Hydrogen Safety Management Law (Feb. '20)

Goals or Focus Areas

- Huge demand creation
- Demand-based **distribution infrastructure**
- Clean hydrogen **supply chain** establishment
- Institutional foundation for **hydrogen market**

Deployment Goals



Funding

- **Mobility subsidy** budget: 620.9B KRW (473M USD)
- **Hydrogen, FC R&D** budget: 270.2B KRW (196M USD)

Thank you



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