



International Partnership
for Hydrogen and Fuel Cells
in the Economy

Republic of Korea Update

35th IPHE Steering Committee Meeting

22 – 23 June 2021

Virtual Meeting

Announcements / New Initiatives: *Republic of Korea*



• Investments/Funding/Policies/Initiatives

- Hydrogen Economy Law came into force (Feb. 2021), 1 year after enactment
- 11 Hydrogen-specialized companies designated based on Hydrogen Economy Law (June)
- Private sector (SK, Hyundai Motors, etc.) to invest US\$38+ billion until 2030 (March)
 - Production (US\$10B), storage & supply (US\$7B), application (US\$20B)
 - SK, Hyosung to embark on building H₂ liquefaction plants (commercial production in Jun. '23).
- Revision of the law proposed on “Clean Hydrogen Energy Portfolio Standards (CHPS)” and clean hydrogen certification system (June)
 - CHPS for H₂-fueled power generation (currently included in RPS)
 - Standards and verification process being developed for certification system



Announcements / New Initiatives: *Republic of Korea*



• Investments/Funding/Policies/Initiatives

- Online quiz contest on hydrogen economy getting public attention
 - 150K contestants so far for the weekly quizzes



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

- NH₃-based H₂ production: 20Nm³/h completed, 1,000Nm³/h being developed
- Hydrogen industry life-cycle safety support center to open Dec. 2021
 - Test and inspection of various hydrogen equipment and mobility-related parts

• Key Collaborations

- Hyundai Motors, SK, POSCO, Hyosung agreed to form a hydrogen company alliance similar to Hydrogen Council



Examples of Lessons Learned and Impact *Republic of Korea*



Program initiative, policy, regulation or mandate	Lessons Learned/Outcomes
Hydrogen Economy Law	<ul style="list-style-type: none"> • Difficulties while drafting without precedents to be referred to • Effective in encouraging private sector investment as a clear signal for political willingness to expedite hydrogen economy
Private sector investment promotion	<ul style="list-style-type: none"> • Government support* needed to synchronize investment in production, supply and application * Relevant safety regulation, R&D funding for FCEV parts, etc.
Clean Hydrogen Energy Portfolio Standards (CHPS)	<ul style="list-style-type: none"> • Various challenges in establishing standards/process for clean hydrogen certification • Need to address concerns about price competitiveness of clean hydrogen power generation



Republic of Korea – June 2021

Status of Deployments

- ✓ Stationary FC: **658.7MW**
- ✓ FCEV: **14,426**
- ✓ FC Bus: **106**
- ✓ HRS: **88**

Leading Government Initiatives

Hydrogen Economy Roadmap of Korea (Jan. '19)
backed by
Hydrogen Economy Promotion and Hydrogen
Safety Management Law (Feb. '20)

Deployment Goals

	2022	2040
FCEV Production	67,000	2.9 million
HRS	310	1,200
Power Gen FC (dom.)	1GW	8GW
H2 Supply	0.47MMt	5.26MMt

Goals or Focus Areas

- Clean H₂ production RD&D
- Strengthening Hydrogen ecosystem competitiveness
- Expansion of infrastructure by easing regulatory barriers
- Establishment of safety management system

Funding

- **2020: 2.6T KRW (US\$2.16B)**
 - Passenger cars: 2.3T KRW
 - HRS: 95.1B KRW

Thank you



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Highlight to Include in IPHE Newsletter – *Republic of Korea*



Korean big companies such as SK, Hyundai Motors and POSCO announced investment plans worth more than US\$38billion (until 2030) in total. They revealed their plans in the third meeting of Hydrogen Economy Committee in March 2021. The plans cover the whole hydrogen supply chain – production (US\$10B), storage & supply (US\$7B) and application (US\$20B). The ceremony marking hydrogen industry ecosystem establishment was also held in tandem with the meeting.



Minister of Trade, Industry and Energy, President of SK, Prime Minister, President of Hyundai Motors and Minister of Environment (from left) (2 March)



Status of Applications and Goals – *Republic of Korea*

Application	Status (As of June 2021)	Goal (For 2040)
1) H₂ Applications		
a. Energy Storage (e.g. MW, GW of capacity)	-	-
b. Electrolyzers	-	-
c. Other (e.g., Steel, Marine, Fertilizer, etc.)	-	-
2) Transportation		
a. Light Duty Vehicles	14,426	2.9 million
b. Medium and Heavy Duty Vehicles	-	30 thousand
c. Buses	106	40 thousand
d. Trains	-	-
e. Forklifts	-	-
3) Stationary		
a. Residential	658.7MW(Total Stationary FC)	2.1GW (residential, commercial combined)
b. Commercial	658.7MW(Total Stationary FC)	2.1GW (residential, commercial combined)
c. Power Generation	658.7MW(Total Stationary FC)	8GW
4) Hydrogen Refueling stations	88	1,200