APEC CLCH Policy Convention

Policy and Regulatory Instruments to Create Demand

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Major Steps in Hydrogen Economy Policy

(Jan. '19) Hydrogen Economy Roadmap

- Industry ecosystem with emphasis on FCEV & fuel cell
- Grey hydrogen: 50% ('30) → 30% ('40)

(Feb. '20) Hydrogen Economy Law

- Legal framework for safe hydrogen economy promotion

(Nov. '21) Master Plan for Hydrogen Economy Implementation

- Clean hydrogen: 75% ('30) → 100% ('50)
- Main H_2 demand: power generation, industry, mobility

(Nov. '22) 3-Up Strategy (Scale-Up, Build-Up, Level-Up)

- Demand creation in power generation & transport
- Establishment of global supply chain and domestic infrastructure
- Industry ecosystem fostering with leading-edge technologies

Hydrogen Demand Creation in General

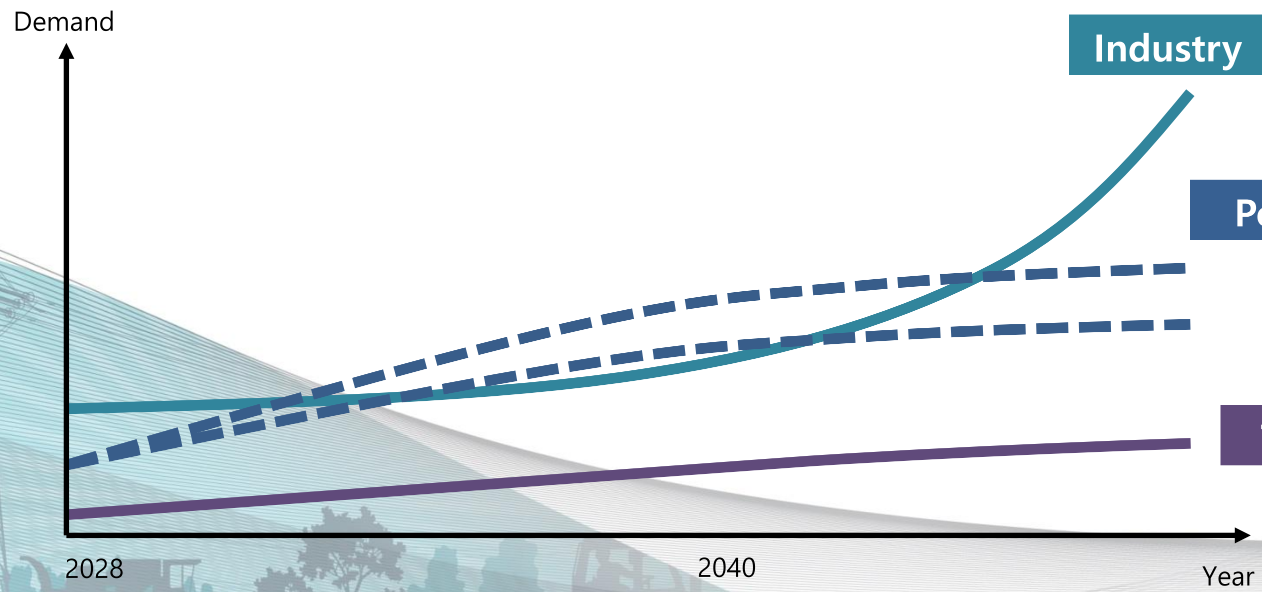
- Kickstarting Hydrogen Demand
  - Policy focus has always been on demand creation
  - Various measures fit to market characteristics
  - Subsidies to R&D and regional developments
- Progress and Policy Direction by Sector

Transport	• World's second largest FCEV fleet • Subsidies for car purchase and HRS
Power Generation	• National target for hydrogen power generation • Additional costs borne by consumers
Industry	• Demonstration projects in iron & steel sector • Government support and legal basis for obligation

Hydrogen Demand Creation in General

- Demand Characteristics

Transport	Smallest share covering residual of electrified transport
Power Generation	Dependent on increase in renewables and nuclear
Industry	Significant demand expected from the late 2030es



Transport

- 44,655 FCEVs and 477 HRS pumps (Dec. ’25)
  - 2,871 FC buses and 55 trucks
  - Hydrogen tram line under construction in Daejon, Ulsan
- Subsidies in 2026
  - 576.2B KRW to FCEV purchase
    - 6,000 passenger cars, 1,800 buses and 20 trucks
  - 189.7B KRW to new HRS

Hydrogen Tram
(Hyundai Rotem)

Source: Joongang Daily

HRS in National Assembly

Source: Yonhap News Agency

Power Generation

- Hydrogen Power Generation Bidding
  - Electricity from hydrogen or its derivatives
  - Clean ($<4kgCO_2/H_2$) and general (no limit) chapter
  - 15-yr contract with price (index) and quantity
- Results
  - Clean: 750GWh awarded (1 round), coal co-firing
  - General: 4,217GWh (4 rounds), all FCs
- Currently under Review
  - To be better aligned with ambitious policy goals
  - To manage its implication on electricity tariff

Industry

- Legal Basis
  - Hydrogen Law: future obligation of clean hydrogen use
  - K-Steel Law: support & tax benefit for low-carbon tech
- Iron & Steel
  - Direct reduced iron demonstraion project (′26-′30)
    - Funding: government (210M USD), private (344M USD)
    - 300K ton facility to be completed by 2028
  - First commercial operation by 2037
- Other Industries
  - Oil refining & petrochemical: replacing fuel & feedstock

Regional Development

- Hydrogen Cities
  - Implementation of hydrogen technology in city lives
    - Hydrogen production, fuel cell installation, hydrogen mobility backed by supply infrastructure (pipeline)
  - 15 cities and counties designated since 2023
    - After 3 model cities (Ansan, Ulsan, Jeonju-Wanju) in 2020
- Hydrogen Specialized Clusters
  - Regional level hydrogen industry integration and ecosystem build-up
  - Two clusters designated in 2024
    - Donghae-Samcheock: liquid hydrogen transport & storage
    - Pohang: fuel cell power generation

Clean Hydrogen Certification

- Technology-neutral Scheme
  - Any production pathways contributing to meeting national GHG reduction goals
  - Life-cycle emissions below $4kgCO_2/H_2$
    - Well-to-gate (hydrogen production)
- Safeguarding Legitimate Demand Creation
  - Only clean hydrogen should be eligible for support
    - Higher prices of clean hydrogen work against demand creation
  - Certification scheme in parallel with demand creation
    - Picking less-costly high-emission hydrogen out from support

Important Factors

- High Prices
  - Fewer FID over high and uncertain prices
  - Political support may weaken as high prices persist
  - Very hard to discover price without functioning markets
- Infrastructure
  - Pipelines are a must for large scale demands
  - Exporting/importing ports with storage
- Trade Rules
  - CBAM: catalyst for decarbonization in industry sectors
  - Stronger measures in leading markets very helpful

감사합니다.
Thank you.