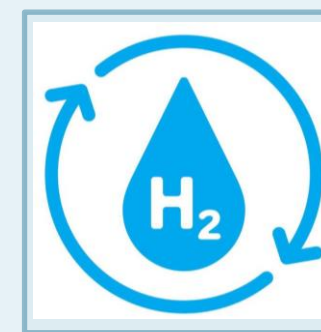


PERU'S APPROACH TO HYDROGEN TRADE CHALLENGES: REGULATORY FRAMEWORK, STANDARDS & APEC COOPERATION

SESSION 5: ADDRESSING THE TRADE CHALLENGES - TECHNOLOGY AND REGULATION



- ◆ APEC CLCH Policy Convention – Hong Kong, China – May 20–21, 2026
- ◆ Presenter: Mrs. Dewi Zamora Mendoza, APEC Specialist
- ◆ Peru



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Peru’s Regulatory Journey: Building the Green Hydrogen Framework

- ◆ 2000 **Law No. 27345:** Energy Efficiency Promotion Law. Declares promotion of efficient energy use to be of domestic interest. MINEM designated as competent authority.
- ◆ 2008 **Legislative Decree No. 1002:** Promotes renewable energy investment for electricity generation. Declares RER development to be of domestic necessity.
- ◆ Apr 2023 **RM No. 165-2023-MINEM/DM:** Creates the Multisectorial Working Group to propose regulatory and promotional alternatives for green hydrogen projects.
- ◆ Mar 2024 **Law No. 31992:** Green Hydrogen Promotion Law – Core legislation fostering R&D, production, storage, transport, commercialization, and export of green hydrogen to reduce GHG emissions and meet Peru’s NDC commitments.
- ◆ Aug 2024 **Legislative Decree No. 1629:** Amends Law No. 31992. Defines green hydrogen as "hydrogen obtained from water through processes that use renewable energy resources as an energy source."
- ◆ Jan 2025 **Law No. 32249:** Amends Law No. 28832 to guarantee secure, reliable, and efficient electricity supply and diversify the energy matrix.
- ◆ Oct 2025 **RM No. 314-2025-MINEM/DM:** Pre-publication of the draft Supreme Decree approving the Regulation of Law No. 31992, currently under evaluation.

◆ From 2000 to 2025: Peru has built a comprehensive regulatory foundation for green hydrogen, from energy efficiency to dedicated H₂ legislation.

APEC Peru 2024 - A Landmark for Hydrogen Cooperation in the Asia-Pacific

◆ 14th APEC Energy Ministers’ Meeting

In August 2024, Peru hosted the 14th APEC Energy Ministers’ Meeting, where ministers from all 21 APEC member economies reached consensus and signed the Lima Declaration, promoting policy guidelines for a just, clean, and sustainable energy transition.

◆ First-Ever APEC Hydrogen Guidelines

At Peru’s proposal, for the first time in APEC history, guidelines were developed for the implementation of clean and low-carbon hydrogen in the Asia-Pacific region – recognizing hydrogen as an effective source for decarbonizing key sectors such as industry and transport.

◆ Historic Consensus After 9 Years

After 9 years without consensus, APEC members achieved agreement, reaffirming the commitment of APEC economies to international cooperation in energy security.

◆ Peru as Lead Promoter

Peru is the lead promoter of these norms, demonstrating its strategic position as a bridge between hydrogen-producing and import-demand markets in the Asia-Pacific.

◆ Peru 2024 marked a turning point: APEC now has a shared framework for clean hydrogen cooperation across all 21 member economies.

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Peru’ Renewable Advantage: The Foundation for Green Hydrogen

Resource	Technical Potential (MW)	Installed Capacity (MW)	Utilized (%)
Solar	937,185	993	0.11%
Hydraulic	69,445	5,662	8.15%
Wind	20,493	1,015	4.95%
Geothermal	2,859	0	0%

- ◆ The southern departments of **Arequipa, Moquegua, and Tacna** present the best solar conditions (irradiation: **6.8–7 kWh/m²**).
- ◆ **Arequipa** alone holds a solar potential of **230 GW**; **Piura** 132 GW; **Puno** 137 GW.
- ◆ As of February 2026, projects approved for entry into the domestic grid before 2030 total **8,189 MW in wind** and **13,628 MW in solar** (Osinergmin, 2026).
- ◆ Peru’s solar potential is massive with only 0.11% utilized – a unique foundation for competitive green hydrogen production.

Peru’s Green Hydrogen Production Projections

Production Projections	GHG Emission Reductions
2030: 75–288 kton H₂/year 2040: 363–1,458 kton H₂/year 2050: 535–3,287 kton H₂/year	2030: 154–564 ktCO₂eq/year 2040: 493–1,980 ktCO₂eq/year 2050: 1,050–6,445 ktCO₂eq/year Transport sector (FCEV) shows the highest reduction potential in 2050.

Priority domestic sectors: mining, fisheries, industry, transport, gas blending (5%), and raw materials (fertilizers, ammonia, explosives)

◆ By 2050, Peru could produce up to 3.3 million tons of green hydrogen annually at under USD 2/kg – among the world’s most competitive costs.



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Risks & Gaps Identified: Peru’s Assessment

◆ Technology Risks (short-term priority)

◆ Financial & Investment Risks (short-term)

◆ Market Evolution Risks

◆ Infrastructure Gaps

◆ Policy & Regulatory Gap

◆ Key Short-Term Contingency Actions

- Develop specific regulation for the scalability of H₂ production
- Enact domestic hydrogen roadmap/strategy
- Establish origin/certification guarantee schemes
- Launch public education programs and stakeholder training



Building Peru's Quality Infrastructure for Green Hydrogen

◆ INACAL & CTN 175 – Standardization Committee

Established September 2024, secretariat by H2 Perú. P-member of ISO/TC 197. Proposed hosting ISO/TC 197 Plenary in 2028. Peru hosts 35th IAAC Assembly in 2026.

◆ Standards Under Development (2026, ~80% reviewed)

- PNTP-ISO/TS 19870 – GHG emission methodology for H₂ production, conditioning, and transport
- PNTP-ISO 14687 – Hydrogen fuel quality: product specification
- PRTP-ISO/TR 15916 – Basic safety considerations for hydrogen systems

◆ International Certification Frameworks & Korea–Peru Project

Recognized: **CertifHy** (EU), **CertHiLAC** (LAC/OLADE), **ISCC PLUS**, **Green Hydrogen Standard** (GH2). Korea–Peru Project (ISCP/ODA, 2026–2028): capacity-building with KATS, H2KOREA, and KGS.

◆ Safety Standards Applied (pending domestic regulation)

ISO/TR 15916, ISO 19880-1, NFPA 2, NFPA 55, ASME B31.12, Directive ATEX (EU), IEC 60079

◆ Identified Gaps

No accredited CABs yet for green hydrogen; local capabilities needed for high-pressure/cryogenic testing; shortage of specialists; methodological fragmentation on emission measurement.

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Peru’s Green Hydrogen Export Potential: Competitive Positioning

660 Mt

Global H₂ Demand by 2050

2.52 Mt

Max Export Vol by 2050

- ◆ **Global demand:** 65% concentrated in North America, Europe, and East Asia. Largest demand centers: **Germany, China, Japan, and Korea.**
- ◆ **Competitive advantage:** Abundant underutilized renewables (especially solar), available land, seawater access for desalination, and Pacific coastal ports for ocean shipping.
- ◆ **Active Projects**
 - **Horizonte de Verano** (Arequipa): Phase 1: mid-2027. Target: Asia and Europe.
 - **Phelan Green Energy** (La Joya): Production from mid-2028.
 - Currently: **2 projects in operation, 7 in development** (Source: H2LAC platform, March 2025).

- ◆ Peru combines world-class renewable resources with Pacific coast logistics to position itself as a competitive green hydrogen exporter to Asia and Europe.



Peru’s Vision to 2050: A Sustainable & Global Hydrogen Player

"To support long-term energy security, maximizing Peru’s renewable energy potential, through adequate regulation of roles, markets, and standards that make green hydrogen a sustainable energy source."

Three Strategic Objectives		
1. Develop regulation for the green hydrogen value chain	2. Foster green hydrogen projects for domestic and export markets	3. Strengthen multisectorial coordination for implementation

Peru’s NDC Commitment: 40% reduction in GHG emissions by 2030

◆ Key International Partnerships (2024–2025)

- **MOU with Korea Energy Agency (KEA)** – May 2024: green hydrogen, renewable energy, EVs, and technology transfer
- **MOU with IEA** – April 2025: energy statistics, renewable energy, green hydrogen, and critical minerals
- **MOU with GCC** – May 2025: investment cooperation with Saudi Arabia, UAE, Qatar, Kuwait, Bahrain, and Oman

◆ Key APEC-Aligned Actions

- Peru as **co-lead promoter** of APEC clean hydrogen policy guidelines (APEC Peru 2024)
- **INACAL** leading APEC project on harmonization of voluntary standards for green hydrogen
- Target: position Peru as a **key exporter to Asia-Pacific** leveraging Pacific coast logistics and competitive LCOH

◆ Peru is building the regulatory, technical, and diplomatic foundations to become a leading green hydrogen player by 2050.

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