

Concept Note:

“Study and Workshop on the Harmonisation of Voluntary Standards for Green Hydrogen and Renewable Energy in APEC Economies”

April 1, 2026



Challenge

Fragmentation of Hydrogen Standards



Carbon Intensity Thresholds

Differences across jurisdictions in the carbon intensity thresholds used to define low-carbon hydrogen, creating inconsistencies in market classification and trade eligibility.



Emissions Accounting

Varied methodologies for accounting greenhouse gas emissions across the hydrogen value chain, leading to incomparable carbon footprint assessments.



Guarantees of Origin

Divergent approaches to Guarantees of Origin systems verifying renewable electricity inputs, affecting the credibility of green hydrogen claims.



Technical Requirements

Inconsistent technical requirements for energy tracing and verification, complicating cross-border certification and market access.



Critical Issue: These differences create a fragmented regulatory landscape that hinders the development of a unified global hydrogen market.



Asia-Pacific
Economic Cooperation

Impact Analysis Implications for Hydrogen Market Development



Market Fragmentation

Divergent standards create isolated market segments, reducing liquidity and limiting economies of scale in hydrogen trade.



Technical Barriers

Incompatible certification requirements act as non-tariff barriers, restricting cross-border hydrogen flows and market access.



Compliance Costs Costs

Firms face increased costs from multiple certification processes, testing, and documentation requirements across jurisdictions.



Investor Uncertainty Uncertainty

Lack of harmonization creates uncertainty for investors developing cross-border hydrogen value chains, delaying capital deployment.



The Path Forward

Ensuring **regulatory transparency** and **interoperability** will be essential to:

- ✓ Facilitate investment
- ✓ Enable technology deployment
- ✓ Promote trade in clean energy
- ✓ Strengthen APEC cooperation



Project Approach



Comparative Analytical Study

Analysis of voluntary standards and certification schemes for green hydrogen across **at least 11 APEC economies**.

Study Components

- 1 Regulatory Frameworks**
Governing hydrogen certification across APEC economies
- 2 Carbon Intensity Methodologies**
Used to determine emissions levels and classifications
- 3 Guarantees of Origin Systems**
Existing or emerging systems for renewable verification
- 4 Emissions Accounting**
Across hydrogen production and supply chains



Objective

Identify areas of **convergence**, **key differences** and **implications** for regional trade and investment

- Convergence areas
- Key differences
- Trade implications
- Investment impacts





Deliverables & Capacity

Project Outputs and Institutional Capacity



APEC Alignment

Supports implementation of the **APEC Policy Guidance**

Guidance to develop and implement on Clean and and Low-Carbon Hydrogen policy frameworks in the in the Asia-Pacific



Project Outputs

Outputs



Comparative Technical Study Report

In-depth analysis of standards across APEC economies



Two-Day Regional Hybrid Workshop

Stakeholder engagement and knowledge exchange



Policy Brief

Recommendations for hydrogen standards cooperation



Institutional Capacity

Peru's National Institute of Quality (INACAL)



International Participation

Active participation in **ISO Technical Committee 197 – Hydrogen Technologies**



Peruvian Committee

Peruvian mirror committee **CTN 175 Hydrogen Technologies**



Adopted Key Standards

ISO/TS 19870

Hydrogen calculation methodologies methodologies

ISO 14687

Hydrogen fuel quality specifications

ISO/TR 15916

Hydrogen safety considerations



Demonstrated technical capacity and commitment to international standards harmonization



Asia-Pacific Economic Cooperation

Thank you!