



AMMONIA ENERGY
ASSOCIATION

AEA Certification Initiative

Ammonia Energy APAC
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Ammonia Certification

The AEA is developing a certification system for ammonia, to account for the GHG emissions associated with production.

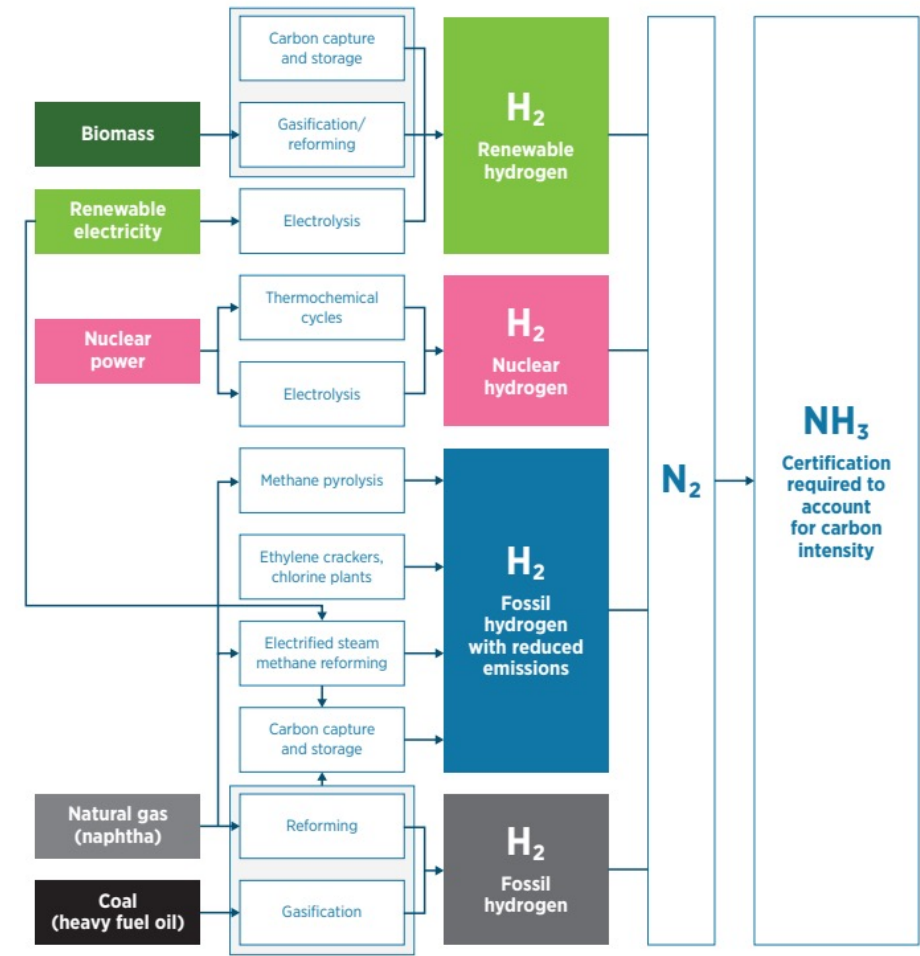
Our objective is to support **global harmonization**, across multiple regions and sectors. AEA is not defining colors (green/blue) or labels (clean/low-carbon) but collecting and qualifying robust data, enabling producers to demonstrate relevant attributes of ammonia to consumers.

Design Principles include:

- **Technology neutral**, including fossil, renewable, bio, nuclear
- **Absolute GHG emissions**, site-specific, measured not modelled
- **Well-to-gate** boundary, including upstream Scope 3
- **Tradable**, enabling the low-carbon ammonia commodity market

Schedule:

- Design phase ends 2023.
- Pilot scheme starts early 2024.



Product specification \neq Quality mark

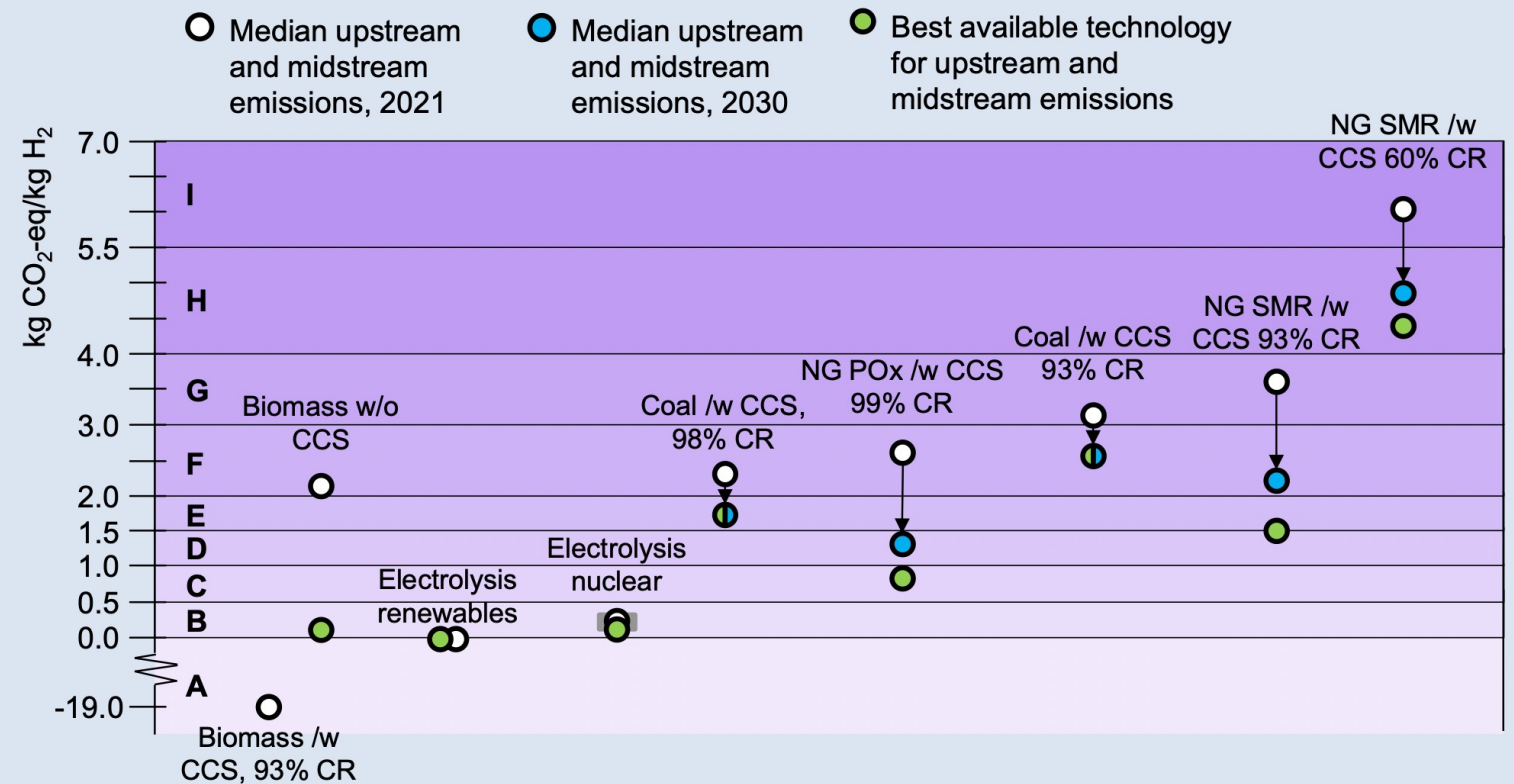
“Certification” here does not mean that ammonia is low-carbon, clean, green, or sustainable. We can certify the emissions of dirty ammonia as well as clean ammonia.

“Certification” here does mean that a producer can demonstrate to its customer whether a batch of product meets the customer’s relevant regulatory or voluntary standards ... or not.

Labels will require this data.

Markets will thrive on this data.

Example of a potential quantitative system for emissions intensity levels of hydrogen production



Ammonia Certification



Multiple hydrogen & derivative certification schemes, labels, standards, and regulations are in development:

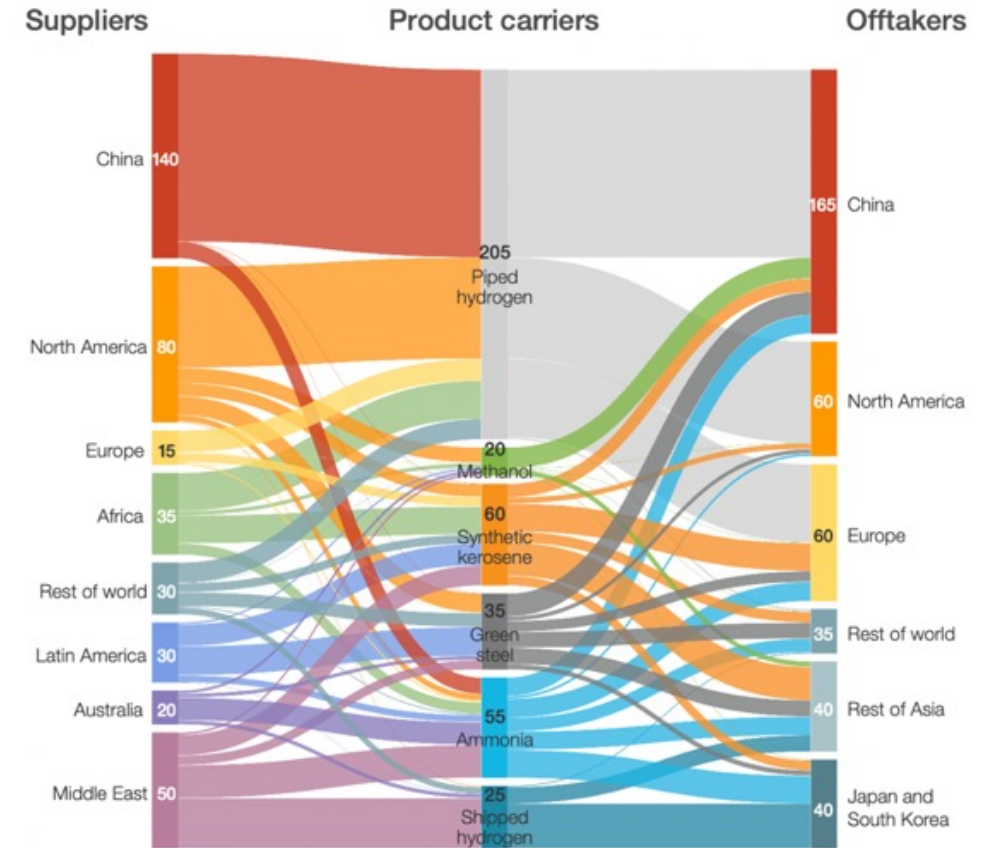
- ISCC
- IMO
- The Fertilizer Institute (USA)
- Green Hydrogen Organization
- UK Government
- Europe (REDII, CBAM, ...)
- TUV Rheinland
- CertifHy
- ISCC+
- ISO
- Fertilizers Europe
- Bureau Veritas
- Australian Government
- USA (IRA, 45V, 45Q, ...)
- TUV Sud

... and more will follow this year.

We need to work together on:

- **International harmonization**, building upon ISO and IPHE.
- **Data standards**, for comparability between schemes.
- **Mutual recognition**, for compatibility across jurisdictions.
- **Modular certification**, for feedstock/carrier conversions, transportation & storage, and specific regulator requirements.

Global hydrogen and derivative interregional long-distance supply,¹ million tons per annum



1. Excludes local production and distribution.

Global Hydrogen Flows: Hydrogen trade as a key enabler for efficient decarbonization. Hydrogen Council (October 2022), <https://hydrogencouncil.com/wp-content/uploads/2022/10/Global-Hydrogen-Flows.pdf>

AEA Methodology: comparative analysis

List of schemes included in the analysis

Deconstruction of international certification frameworks, regulations & guidelines

EU Legislation						Americas					
Red II: Article 19 (GOs)	RED II: Article 25, 27 and 30 (RFNBOS)	Carbon Border Adjustment Mechanism (CBAM) (EU ETS)	EU Taxonomy	ReFuel EU Aviation	Fuel EU Maritime	Low Carbon Fuel Standard LCFS	US Clean Hydrogen Standard	45V PTC	45V ITC	The Fertilizers Institute (TFI)	Canada Clean Fuel Standard
EU Private & Voluntary Scheme								UK			
Fertilizers Europe	CertifHy (GOs)	CertifHy (RFNBOS)	TÜV Süd SCMS70	TÜVRheinland	International Sustainability and Carbon Certification (ISCC+)	Roundtable on Sustainable Biomaterials (RSB)	France Funding Ordinance No. 2021-167	Renewable Transport Fuel Obligation	UK Low Carbon Hydrogen Certification Scheme	UK Low Carbon Hydrogen Standard (LCHS)	UK Business Energy Industrial Strategy (BEIS)
Asia & Oceania											
Korean H2 Standard	Chinese Clean Hydrogen Standard (CCHS)	Japanese Organization for Metals & Energy Security (JOGMEC)	Clean Fuel Ammonia Association (CFAA)	Australian GO Scheme	Australia Zero Carbon Certification Scheme (Smart Energy Council)	India Renewable Consumption Obligation					
Global											
ISO/TC 197 - Hydrogen technologies	International Maritime Organization (IMO)	Climate Bonds Hydrogen	Climate Bonds Ammonia	H2Global	Green Hydrogen Organization (GH2)	Open Hydrogen Initiative (OHI)	Bureau Veritas	World Business Council of Sustainable Development			

AEA Certification: Progress and Next Steps

- October 2021: **Consultation Paper** published.
- November 2022: **Design Principles** confirmed, pending publication Q3.
- Oct – Mar 2023: **Methodology Document** drafted, pending publication Q3.
- Apr – Aug 2023: **Deconstructing International Frameworks**: comparative analysis of ~40 global standards and regulations, to assess alignment and inform design.
- Jul – Nov 2023: **Specification of the Scheme**: working group of >60 AEA Members + observers.
- Q1/Q2 2024 onwards: **Pilot operation of the scheme**.

Overall project timeline

