

# 2024 IECEx Hydrogen Conference

Singapore, May 29, 2024

## Safety, Sustainability and Conformity Assessment

Dr. ANDREI V. TCHOUVELEV

DIRECTOR SAFETY & REGULATORY, HYDROGEN COUNCIL

CHAIR, ISO/TC 197/SC 1



# Global Issues require International Solutions

## Participation within Established partnerships – *The Effective vehicle*

### Global SDOs & Regulators



- WP.6
- H2 Task Force Sustainable Energy Division



### Key Strategic Partners

## Hydrogen Council



International Partnership for Hydrogen and Fuel Cells in the Economy



Hydrogen TCP



IRENA  
International Renewable Energy Agency

Community + Stakeholders

International Approach ensures **Safety**, Performance + **Sustainability** are fully addressed *for the Global Community*

Single International Approach instils **Regulatory + Market Confidence**

Use of **Existing International Standards** (and others coming) + **International Certification/Verification** and working with existing International Organizations, for any additional needs, prevents wasteful duplication, thereby

- **Saves time,**
- **Keeps costs down**
- **Facilitates Global Trade + Innovation**



# IECEX Certificates of Conformity Scheme – Well Suited for Hydrogen Technical Field



Equipment

Assemblies

Services

Personnel



Ex Equipment, Components + Systems + **Mechanical Equipment**



Ex Equipment Unit Verification e.g. “Assemblies”



Ex Services, e.g. Repair + Overhaul  
Installation  
Inspection



Ex Competent Person, with Photo ID Card

Started 1996

Currently **over 100** IECEX Certification Bodies offer IECEX Certification  
**>140,000** Certificates + Reports issued including over 30,000 Certificates covering H2:  
- Equipment  
- Services  
- Personnel Cert.



Product testing + initial factory inspection + surveillance

**IECEX Certificates issued in 90+ Countries**

# Pioneering Approach to Certification of H2 Dispensers (via IECEx Operational Document OD 290)

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ISO/DIS 19880-2

Second edition

Secretariat: SCC/BNQ

Prepared by ISO/TC 197/WG 19

Date: April 22, 2024

Gaseous Hydrogen — Fuelling stations — Part 2: Dispensers and dispensing systems

- ❑ IECEx OD 290 is NOT a specification, rather it is a scheme document to ensure consistency among test Houses and Certification Bodies when certifying H2 Dispensers
- ❑ OD 290 developed in close cooperation and input from ISO/TC 197 experts, and used in conjunction with IEC/TS 60079-46 *Equipment Assemblies*, until ISO 19880-2 is published
- ❑ Annex A “*Qualification and Routine Tests*” prided by ISO/TC 197 experts to align with DIS 19880-2.
- ❑ Satisfies immediate industry need to facilitate deployment and regulatory approvals of HRS.



IECEx OD 290

Edition 1.0 2022-11

## IECEx OPERATIONAL DOCUMENT

IEC System for Certification to Standards Relating to Equipment for Use in Explosive Atmospheres (IECEx System)

IECEx certified equipment scheme –  
Harmonized procedures for IECEx certification of equipment, components and systems associated with the production, dispensing and use of gaseous hydrogen

# Similar Approach Fits into H2 Product Certification Scheme (via IECQ CFP claims verification scheme)


TECHNICAL SPECIFICATION

**ISO/TS 19870**  
First edition 2023-11

**Hydrogen technologies — Methodology for determining the greenhouse gas emissions associated with the production, conditioning and transport of hydrogen to consumption gate**

*Technologies de l'hydrogène — Méthodologie pour déterminer les émissions de gaz à effet de serre associées à la production, au conditionnement et au transport de l'hydrogène jusqu'au point de consommation*

Reference number ISO/TS 19870:2023(E)  
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□ ISO/TS 19870:2023 is based on ISO 14067 for CFP and ISO 14040 and 14044 for LCA.

□ Based on ISO 14067, IECQ has launched a new service under its approved process (AP) scheme: the issuing of an IECQ carbon footprint of product claims verification.



IECQ

Carbon footprint of product claims verification

A diagram showing a central cloud with "CO<sub>2</sub>" and three downward arrows, representing carbon emissions. This central element is surrounded by a circular path of icons: a factory, a recycling symbol, a plant, a wind turbine, and a solar panel. The background is a green field with a dark soil base.

**Hydrogen**  
**Council** |