

IEC / JASANZ International Conference 18 April 2024

Mr Chris AGIUS
Executive Secretary
IECQ + IECEx
April 2024

Building Trust in Environmental
Services - supporting a Circular
Economy



How do you explain what IEC Does to the Average Person on the street?



IEC Facilitates the Standard of Living that you enjoy today!

By:

Making Electrotechnology an integral part of your every-day life worldwide:-

- Home
- Transport
- Food
- Clothing
- Entertainment
- Education
- Medical + Many others



Plus – Role in Protecting the environment for our future generations



IEC: the beginning.....

St. Louis 1904: palace of electricity



- **International Electrotechnical Commission** (IEC) – Swiss incorporated Not For profit Company
- Officially formed in 1906 – Lord Kelvin the first IEC President
- Formed to serve needs of industry
- Continues to evolve to the needs of industry

During the 1904 Convention of Scientists, it was felt that a need exists to “*Standardise on Terminology*” when discussing Electrotechnology, thereby planting the seed for IEC. In 1906 IEC was formed with TC 1 “Terminology” the first Committee of IEC and still exists today.

The [IEC](#) (International Electrotechnical Commission) came into being on 26-27 June 1906 in London, UK, moving to its current seat in Geneva, Switzerland in 1948. As a global not-for-profit, non-governmental organization the IEC underpins international trade in electrical and electronic goods, technical innovation, affordable infrastructure development, efficient and sustainable energy access, and the safety and security of people and the environment.

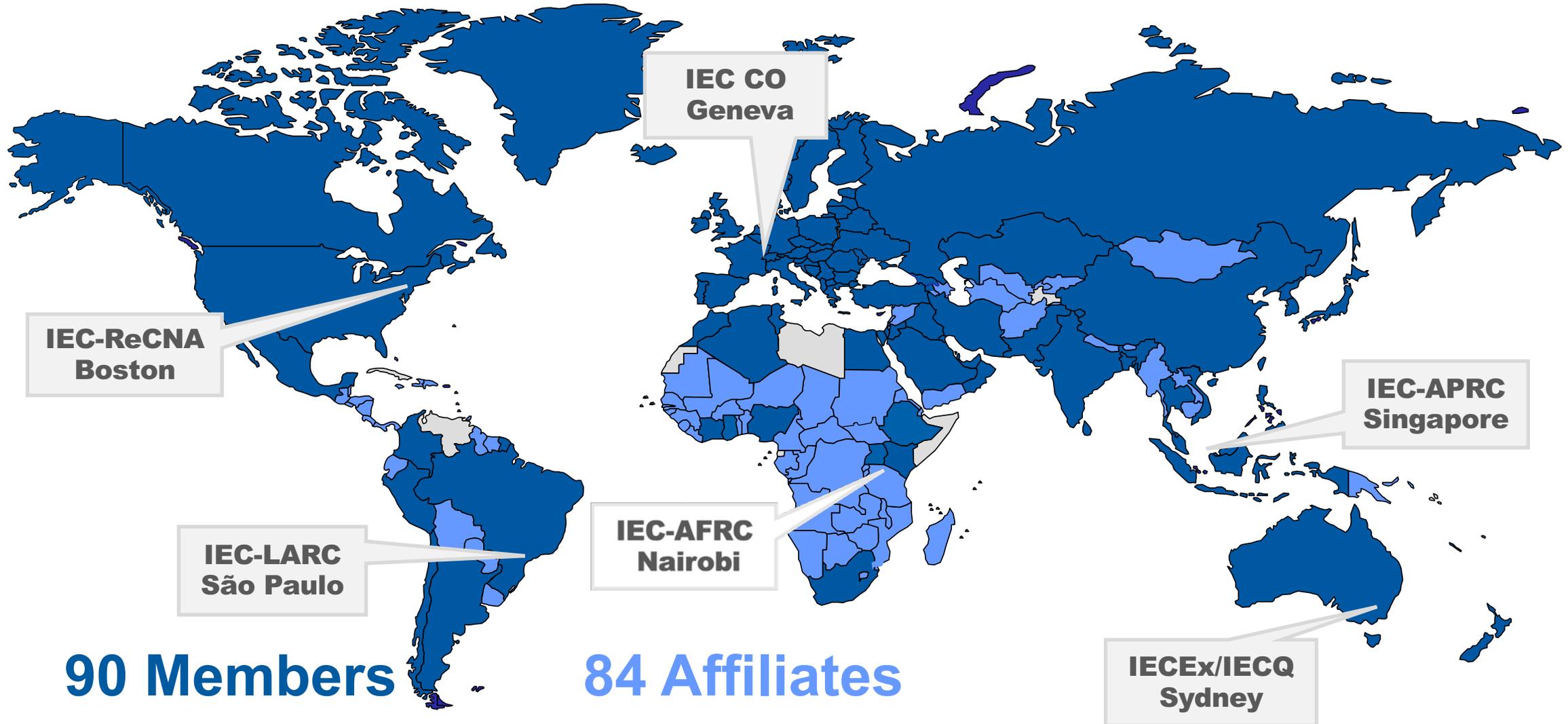


In 1947, at the instigation of IEC General Secretary, Charles Le Maistre, ISA (International Federation of the National Standardising Associations) expanded its field of activity and changed its name to ISO.

IEC and ISO continue to collaborate, eg ISO/IEC Directives, Joint JTC1 + ISO/IEC 17XXX + More



IEC's Global reach: 174 countries





The IEC – Strategic Business Plan

Vision — IEC everywhere for a safer, more efficient world.

Mission — Our mission is to achieve worldwide use of IEC **International Standards and Conformity Assessment Systems** to ensure the safety, efficiency, reliability and interoperability of electrical, electronic and information technologies, to enhance international trade, facilitate broad electricity access and enable a more sustainable world.

3 Strategic Themes supported by 9 Strategic Goals

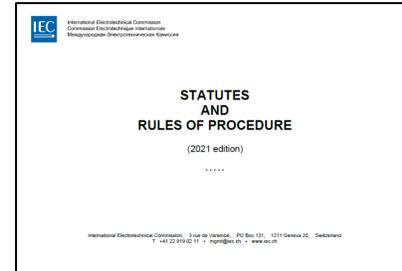
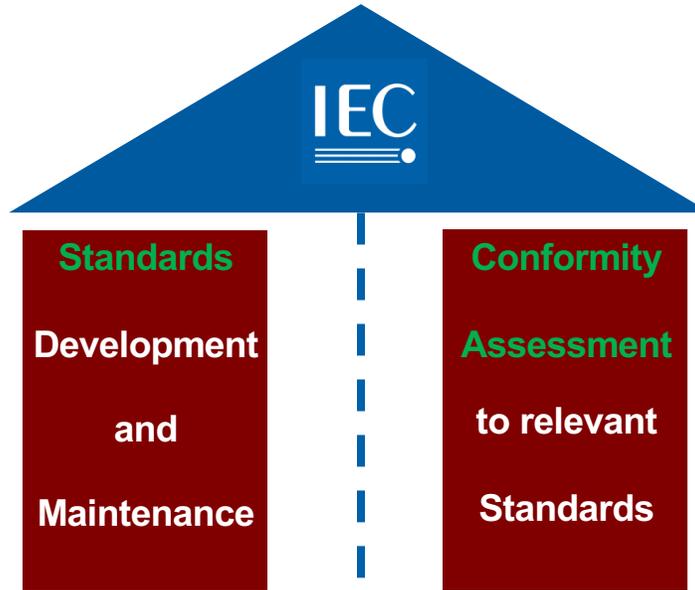
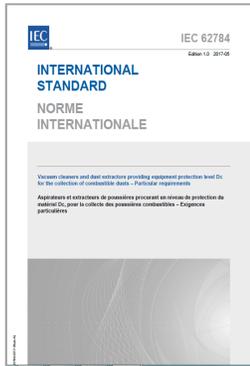
- *Enabling a digital and all-electric society*
- *Fostering a sustainable world*
- *Leading on Trust, inclusion and collaboration*



IEC: A Standardization Organization

With 2 sides to the IEC house

Over 100 years
210 Committees
20,000+ Experts



IEC Standards set out **“Standardised Requirements”**

IEC TCs operate to **common procedures** + provide **common deliverables**

E.g.,
IEC TC 31
IEC TC 111, 107

IECEX
IECQ

IEC CA Systems set out **Standardised way of doing testing, certification and inspection**

CA Systems operate to **different** procedures + provide **very different** deliverables (eg *“Test Certificates”* v *“Certificates of Conformity”* with surveillance)
Certificates on full public access or Not, according to the CA System

The 2 Sides to the House of IEC:
Standards Development +
Conformity Assessment

Each CA System Self Financed



adopted by all United Nations Member States in 2015, provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. At its heart are the 17 Sustainable Development Goals (SDGs), which are an urgent call for action by all countries - developed and developing - in a global partnership

CAB Decision 52/16 — *Report from TF SDGs*

The CAB, noting the report in document CAB/2268A/R, the comments received in CAB/2268B/CC, the verbal update by the convenors, Mr Rajeev Vagdia and Mr Pierre Selva, and the discussion during the meeting, endorsed the report and approved the generic statement given in recommendation A.1. to be used by IEC during events, conferences etc. CAB further requested that this generic statement (as below) be given to the IEC Comms department for appropriate use.

“The IEC Conformity Assessment Board conducted a thorough analysis of the four IEC Conformity Assessment Systems and concluded that all 17 UN SDGs are supported by way of the IEC Conformity Assessment principles, the development, structure, and operation of the Systems, with each System having differing levels of impact on the UN SDGs.”



International
Electrotechnical
Commission

Standards
development

Conformity
assessment

Where we make
a difference

Who
benefits

News &
resources

Programmes
& initiatives

Who we
are



[Home](#) / [Conformity assessment](#) / CA Systems

The IEC Conformity Assessment Systems

The IEC manages the operation of four worldwide Conformity Assessment (CA) Systems. These CA systems represent the only globally standardized approach to testing, inspection and certification

The CAB does not manage the day-to-day work of the CA Systems operated by the IEC, but the Systems report regularly to the CAB, which approves their basic rules. The Systems are governed by management committees composed of representatives of their members. The participants in the Systems are themselves responsible for the tests they carry out and the certificates and marks that they issue under an IEC CA Scheme.

Relevant CAB policy and procedural documents can be found on the [Standing Documents](#) page.



IECEE

IECEE is the IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components.

[Contact us](#)

[Visit IECEE website](#)



IECRE

IECRE is the IEC System for Certification to Standards Relating to Equipment for Use in Renewable Energy Applications.

[Contact us](#)

[Visit IECRE website](#)



IECEX

IECEX is the IEC System for Certification to Standards Relating to Equipment for Use in Explosive Atmospheres.

[Contact us](#)

[Visit IECEX website](#)



IECQ

IECQ is the IEC Quality Assessment System for Electronic Components.

[Contact us](#)

[Visit IECQ website](#)

“CONFORMITY ASSESSMENT”

INTERNATIONAL
STANDARD

ISO/IEC
17000

NORME
INTERNATIONALE

First edition
Première édition
Первое издание
2004-11-01

МЕЖДУНАРОДНЫЙ
СТАНДАРТ

**Conformity assessment — Vocabulary
and general principles**

**Évaluation de la conformité —
Vocabulaire et principes généraux**

**Оценка соответствия. Словарь и
общие принципы**

IEC CA Systems

Principals

- IEC CA Systems are non-profit BUT self financing
- IEC CA Systems creates an international framework in which commercial CA organizations operate – utilising Peer Assessment
- IEC CA Systems utilise mutual recognition
- IEC CA Systems are neutral and transparent
- IEC CA Systems are market driven

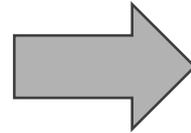
Demand Drivers

- Need for true International Harmonisation – All IEC CA providers offer their services according to the same Scheme Rules + same Standard Operating Procedures
- Level playing field for all IEC CA providers to compete
- IEC CA Certificates and Reports MEAN THE SAME THING regardless of which IEC CA provider issues them – *Franchise model*
- IEC CA activities operate under the well respected IEC Brand + Statutes
- Complete Transparency + use of the On-Line Certificate system
- Provides CA services not always readily available at national level eg Personal Certification



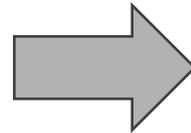
IEC CA Systems – General Setup

IEC CA System



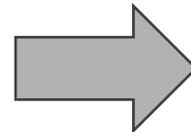
There are currently four IEC CA-Systems, **IECEE, IECEx, IECQ** and **IECRE**

Member Bodies
(Management
Committee)



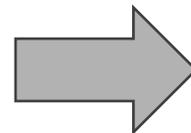
The **Member Bodies (MBs)** are representatives of the national stakeholders either endorsed by or being a part of the IEC NC. **There is only one MB per country.**

Participants
/Operator



Conformity Assessment Bodies located in a specific country such as:
Certification Body, Inspection Body and
Testing Laboratory
Peer Assessment used to verify qualification

Stakeholders

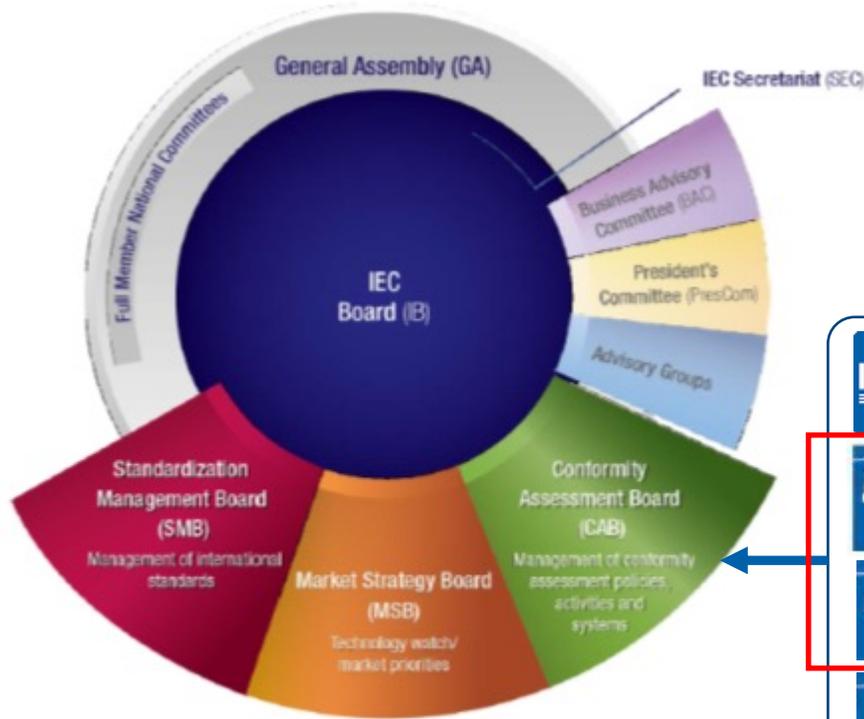


They include a wide representation from industry, electrical **regulatory authorities** and **standards bodies, insurance companies, banks, end user**, as well as **conformity assessment bodies**. Not all Stakeholder groups are equally involved in the different CA Systems



IEC's Standards + Conformity Assessment Services - Governance

Over 100 years
210 Committees
20,000 Experts



40+ years Operating

More than 1 Million Certificates issued

Electrical + Mechanical Products

Electrical + Mechanical Components

Electronic Components and assemblies

Process Certification

Personal Competence

Sector Specific, e.g. Avionics

Self Financed – sets annual budgets

Standards used for IEC CA Activities



Others:

- Regulations
- Specifications

IECEX has Formal Liaison (works) with:
IEC TC 31 – Explosive Atmospheres
IEC TC 105 Fuel Cells
ISO TC 197 Hydrogen Technologies

IECEE in brief

- **23** product categories ranging from Information Technology and electronic equipment, household, medical equipment, lighting to EMC, and Photovoltaics but 60% of activity is concentrated in these three areas:

- Household appliances
- Office & IT equipment
- Electronics / entertainment



IEC		Ref. Certif. No.
IECEE		FR_700391
IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME		
CB TEST CERTIFICATE		
Product	Air Circuit-breaker	
Name and address of the applicant	SCHNEIDER ELECTRIC INDUSTRIES SAS 35, rue Joseph Monier CS 30323 92506 Rosel Malmatou - France	
Name and address of the manufacturer	SCHNEIDER ELECTRIC INDUSTRIES SAS 31 rue Pierre Mendès France, Eybens, 38000 GRENOBLE Cedex 9 - France	
Name and address of the factory	SCHNEIDER ELECTRIC Alpes Viale Isaac Newton 2, Alpegaux, 73000 FRANCAIS - France	
Notes: When more than one factory, please report on page 2	<input type="checkbox"/> Additional information on page 2	
Ratings and principal characteristics	See Annex	
Trademark / Brand (if any)		
Customer's Testing Facility (CTF) Stage used	CTF2	
Model / Type Ref.	Mainstream MTZ Type H1: MTZ-40 H1, MTZ-50 H1, MTZ-63 H1, MTZ-70 Type H2: MTZ-40 H2, MTZ-50 H2, MTZ-63 H2, MTZ-70 H2 Type H3: MTZ-40 H3, MTZ-50 H3, MTZ-63 H3, MTZ-70 H3	
Additional information (if necessary may also be reported on page 2)	Circuit-breaker equipped with Micrologic X control units : 2.0 X - 5.0 X - 6.0 X - 7.0 X <input type="checkbox"/> Additional information on page 2	
A sample of the product was tested and found to be in conformity with	IEC 60947-1:2007(ed.5) +A1:2010 +A2:2014 IEC 60947-2:2006(ed.4) +A1:2009 +A2:2013 140491-697927	
As shown in the Test Report Ref. No. which forms part of this Certificate		
This CB Test Certificate is issued by the National Certification Body		
L'CEI - Laboratoire Central des Industries Electriques 23, avenue du Général Leclerc - 8096 FR 92 290 Fontenay aux Roses Cedex FRANCE		
Date: 16/03/2017	Signature: Jean-François BRUEL Certification Officer	

Electrical Safety
EMC
Energy efficiency
Performance
Cybersecurity
Functional Safety

IECEE Facts

- **54** participating countries
- **94** National Certification Bodies - NCBs
- **About 550** Testing Laboratories – CBTs
- **Around 120,000** certificates issued in 2023
- More than **15,000** manufacturers using the CB Scheme, around **2000** registered in the CTF programs

What is the IECRE?

IECRE is the abbreviation for IEC System for Certification to Standards Relating to Equipment for Use in Renewable Energy Applications - “IECRE System”

- **IECRE operates a single, global certification system addressing 3 sectors**
 - ❖ **Solar photovoltaic (PV) power**
 - ❖ **Wind power**
 - ❖ **Marine energy**

IECRE Facts

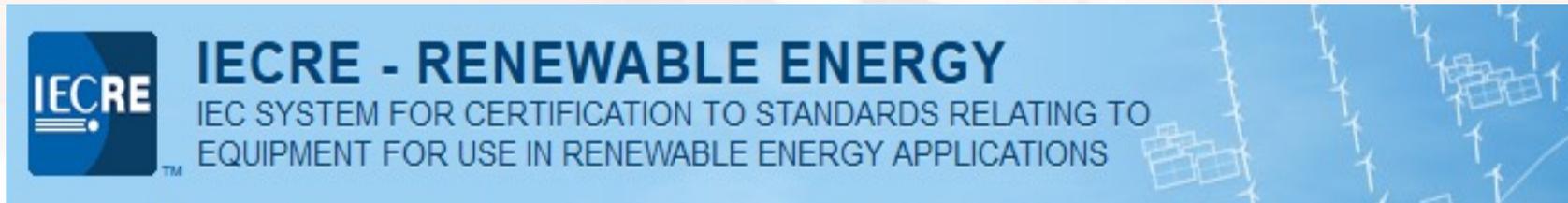
- **16** participating countries
- **11** Renewable Energy Certification Bodies - RECBs
- **33** Testing Laboratories – RETLs
- **3** Inspection Bodies - REIBs
- **More than 150** certificates issued in 2023
- **3** registered CTFs

IECEE & IECRE there is much more to discover

<https://www.iecee.org/>



<https://www.iecre.org/>



IEC's System for Certification to Standards relating to Equipment for use in Explosive atmospheres, IECEx

IECEX Value Proposition – 1 of the IEC CA Systems

Provides Assurance to Industry, Commerce, Regulators and Consumers that operations and activities involving flammable and combustible materials can continue safely and reliably, by providing an Internationally Standardized Approach to Testing and Certification, regardless which IECEx Approved Certification Body is used.

Industries that use flammable/combustible materials include:

- Production, Storage, Dispensing and use of flammable liquids and Gases, such as Hydrogen, including GH2
- Transport, eg cars / planes / ships / trucks (Passenger + Freight)
- Fueling stations and storage facilities
- Oil and gas exploration and processing
- Coal mining
- Food manufacture and processing
- Grain handling/storage/transportation
- Pharmaceutical manufacturing
- Textiles, fabrics and clothing
- Paint and surface coatings
- Medical applications, eg hospitals
- Furniture manufacturing
- Sewerage treatment plants
- Underground car parks
- Others

Started **1996**

Currently **105**
IECEX Approved
Certification
Bodies offer
IECEX
Certification
>160,000
Certificates +
Reports issued





IECEX Certificates of Conformity



Equipment

Assemblies

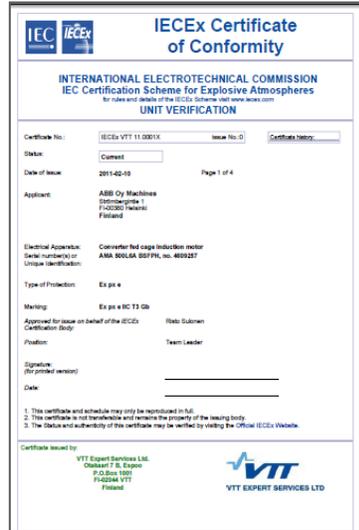
Services

Personnel



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

Product testing + initial factory inspection + surveillance



Ex Equipment Unit Verification e.g. **“Assemblies”**



Ex Services, eg Repair + Overhaul Installation Inspection



Ex Competent Person, with Photo ID Card

- Operation within the IEC – Not for Profit
- >100 IECEX Approved Certification Bodies can issue International IECEX Certificates
- Dedicated Unit 011 for **Hydrogen Safety** according to ISO 15916 Standardised way of doing Certification
- Self funded with annual operating Budget CHF 1.8M / 2.7M in reserves
- Centralised On-Line Certificates – Free Public Access



IECEX Certificate number Appears on product

– Example: **IECEX BAS 11.0004**



007-100 IIC Position Monitor
 Baseefa11ATEX0010 **IECEX BAS 11.0004**

Exd IIC T6 Ta -20°C to +40°C Gb
 Ex tb IIC T85°C Ta -20°C to +40°C Db IP66/67
 Model No. SBR-*****/1 2012
 Serial No. *****/001 Type SC6.1
 Rating U_{max} 250V I_{max} 10A W_{max}
 Conduit Entry. M20
 Internal temperature rise 35K max cabling to be suitable

Cover fastener min grade A2-70
 WARNING DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT
 II 2 GD [redacted] England +44 (0)1895 449601 1180




IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
 IEC Certification System for Explosive Atmospheres
 for rules and details of the IECEX Scheme visit www.iecex.com

Certificate No.: **IECEX BAS 11.0004** Page 1 of 5
 Status: **Current** Issue No: 10
 Date of Issue: 2018-08-22
 Applicant: Topworx (trading as, or d/b/a K Controls Ltd)
 3300 Fern Valley Road
 Louisville
 KY 40213
 United States of America
 Equipment: Type 007-100 IIC Position Monitor
 Optional accessory:
 Type of Protection: Flameproof and Dust Protected

<https://www.iecex-certs.com/#/deliverables/CERT/3339/view>

Under the IECEX Certified Equipment Scheme, the IECEX Certificate number displayed on the product matches the Certificate Number as shown on the Master version on the website – provides **instant verification of claims** of IECEX Certification

IECEX On-Line Certificate System, in real-time, helps prevent fraudulent claims

IECEX Certificates
 International Electrotechnical Commission System for Certification to Standards Relating to Equipment for Use in Explosive Atmospheres

Search certificates or reports by reference number / applicant / manufacturer / keyword ...
 or click here to search the full catalogue with filters and sorting tools

Guidance on use of this website can be found here
 More information about IECEX is available at www.iecex.com and via email to info@iecex.com

Certified equipment mark licenses service facilities and certified persons
 Over 92,000 certificates, reports and licences
 Used by over 4,500 manufacturers in over 50 countries
 Issued by over 100 IECEX Certification Bodies
 Over 300 types of protection

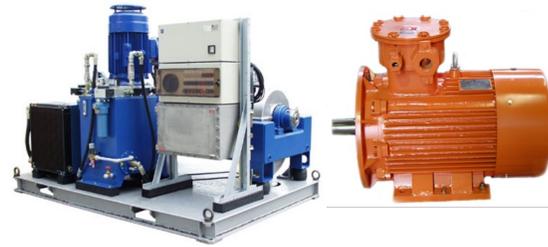
Privacy | Contact | IEC offices
 Important information
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Summary of IECEx (3 separate Certification Schemes)



IEC System for Certification to Standards relating to Equipment used for Explosive Atmospheres, Ex



Certified Equipment Scheme
Ex Equipment, Components and Assemblies



Certified Services Scheme
Ex Services, e.g Ex Repair Workshops



Personal Certification
Certification of Competence

Certifies Products, (inc Components, Assemblies), Services and Persons to IEC and ISO International Standards. Initial and on-going audits required (eg factory inspections)

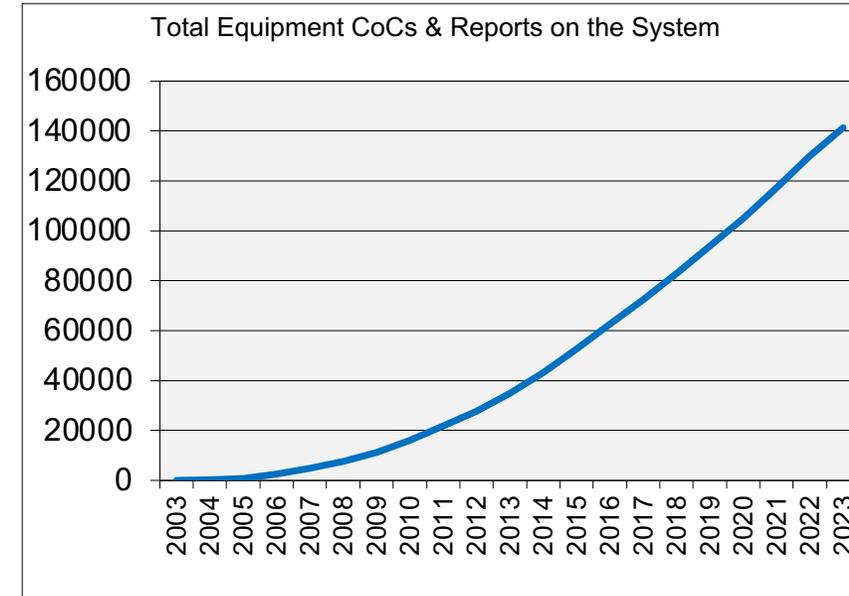
Full public access to all issued IECEx Certificates – **On-Line version the master and controlled version, in real-time.**

Mutual Recognition of Test Reports and Factory audit Reports applicable only to IECEx Certified Equipment Scheme.

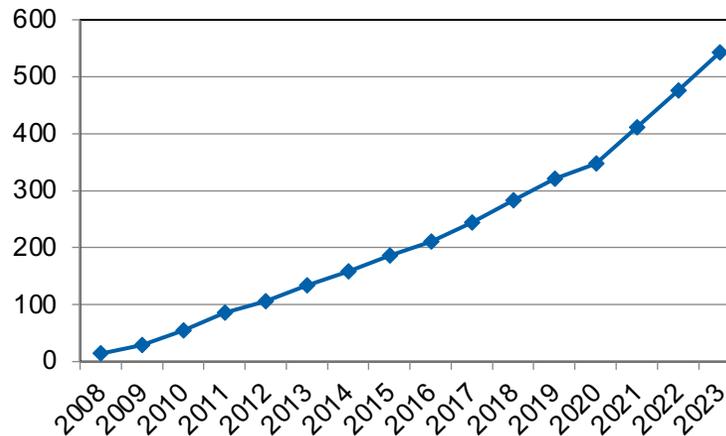


IECEX Stats @end 2023

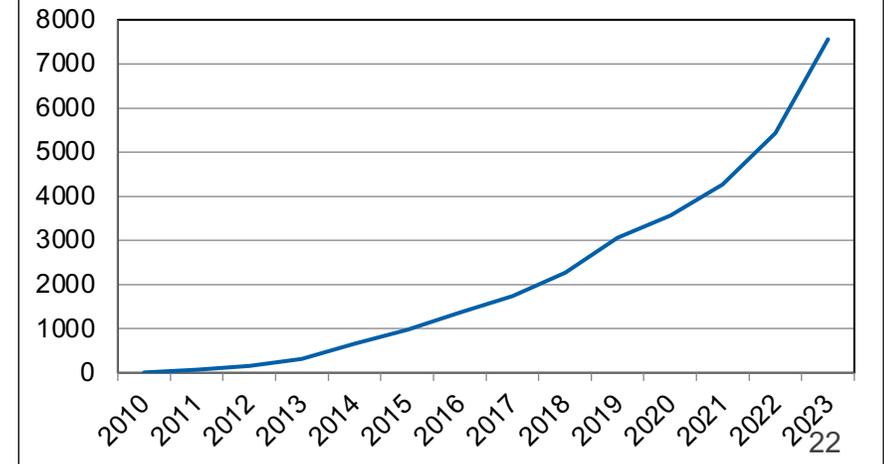
- > 100 Certification Bodies, across IECEX Schemes – *The IECEX Service Providers*
- > 80 Test Labs
- 35 Recognized Training Providers
- Equipment Scheme: (now at 142.8K)
- Services Scheme: 510 Certificates for Service Providers, eg Repair Workshops (553)
- Personal Certification: 6,800+ Certificates for Competent Persons (now at 7,457)

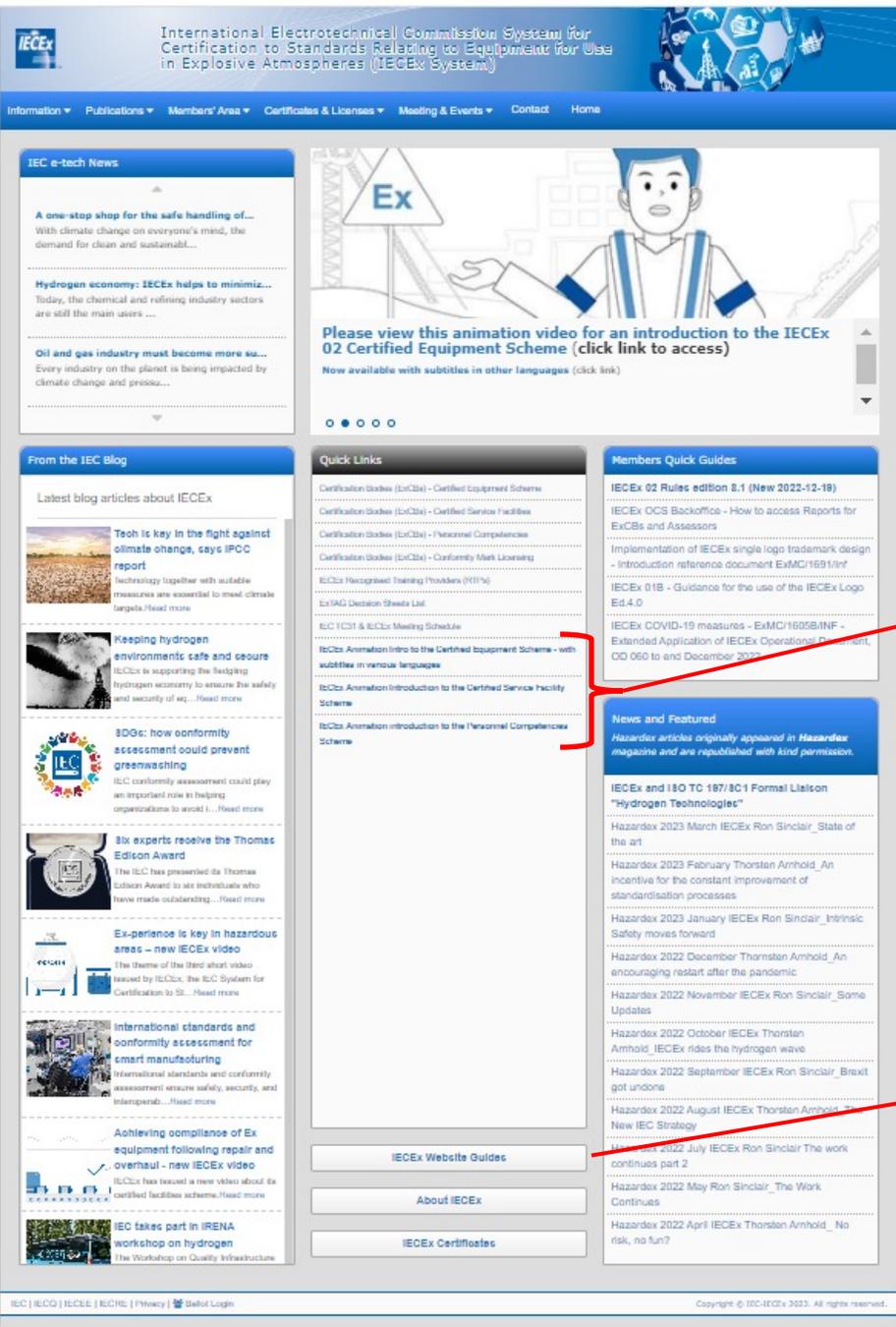


Service Facility Certificates - Cumulative Total



Certified Personnel Scheme - Cumulative Total





IECEX Website www.iecex.com updates / enhancements

Direct access to 3 separate IECEx Animated Videos (also accessible from YouTube):-

- 1. Certified Equipment Scheme
- 2. Certified Services Scheme
- 3. Certified Persons Scheme

Tailored version of the videos available to ExCBs to insert their own logos – many have taken this up

IECEX Website Video Guides on how to use/navigate:

- 1. The IECEx Website (intended for everyone)
- 2. The On-Line Certificate System (aimed at those seeking to look up certificates)
- 3. The On-Line Certificate System – Back Office (mainly for ExCB Staff – how to create/issue CoCs)

Unlocking social value of the hydrogen economy

Public-private cooperation will play a key role in unlocking the positive contribution that hydrogen can bring to several UN Sustainable Development Goals, including:



Good health and well being ⇒ Reducing air pollution



Diversity, equity and inclusion ⇒ Helping unlock diverse talent pool



Affordable and clean energy ⇒ A clean and versatile energy vector



Decent work and economic growth

- ⇒ Fuelling green growth & deliver sustainable jobs
- ⇒ Creating opportunities for indigenous communities through employment and new business creation



Industry, innovation and infrastructure

- ⇒ Fostering decarbonization of the industry, innovation and deployment of clean infrastructure



Sustainable cities and communities

- ⇒ Clean transportation and heating
- ⇒ Sustainable jobs for local communities

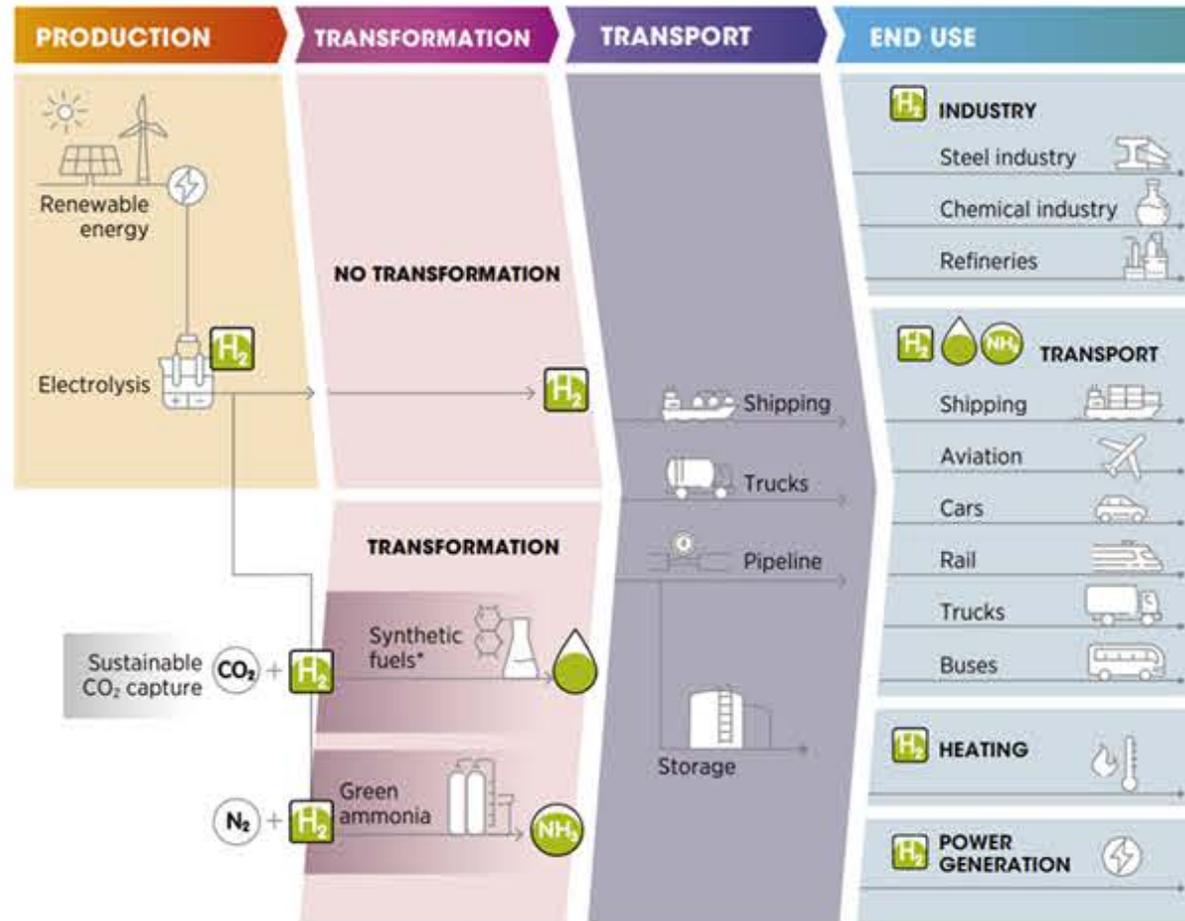


Climate action ⇒ Key solution to decarbonizing economies



**Source Acknowledgment
Hydrogen Council**

Hydrogen Production from Renewables – Production to End use



Source: IRENA.

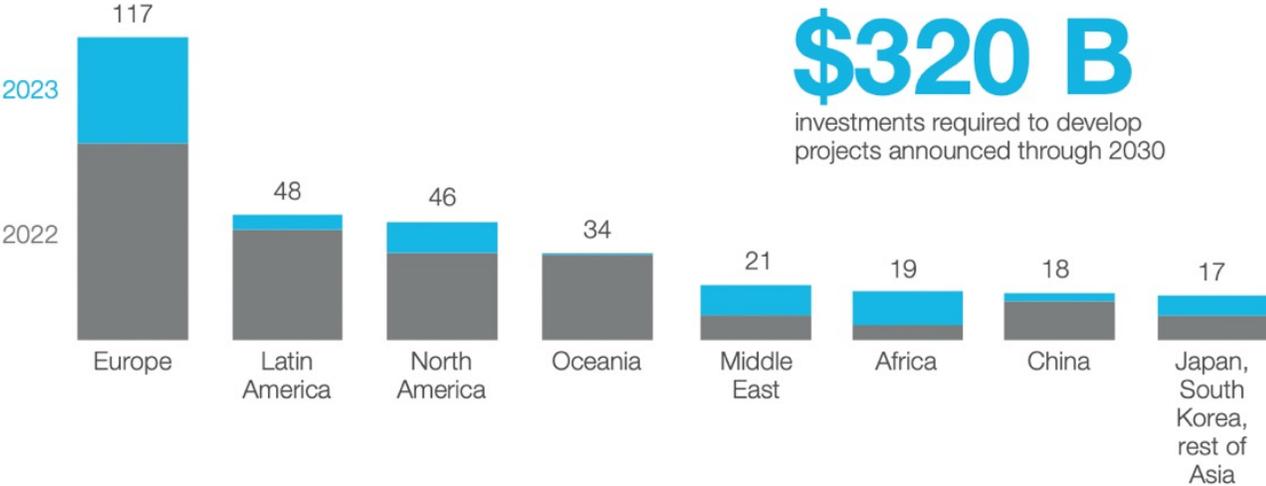
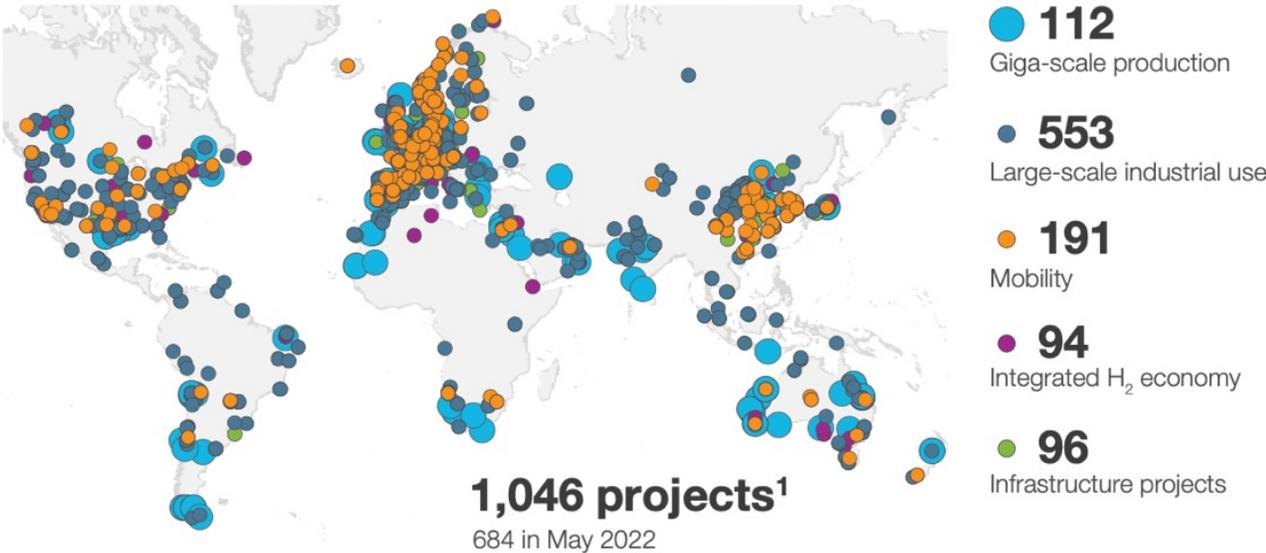
* The term synthetic fuels refers here to a range of hydrogen-based fuels produced through chemical processes with a carbon source (CO and CO₂ captured from emission streams, biogenic sources or directly from the air). They include methanol, jet fuels, methane and other hydrocarbons. The main advantage of these fuels is that they can be used to replace their fossil fuel-based counterparts and in many cases be used as direct replacements – that is, as drop-in fuels. Synthetic fuels produce carbon emissions when combusted, but if their production process consumes the same amount of CO₂, in principle it allows them to have net-zero carbon emissions.

Commercial H₂ production today:

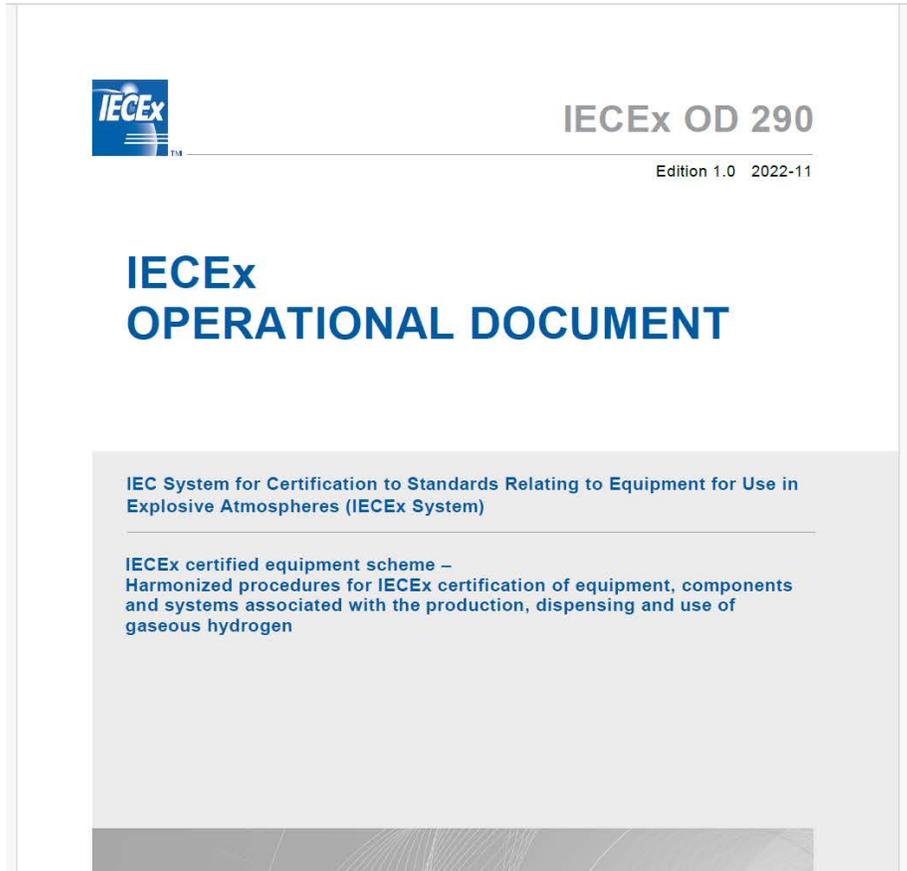
- Approx 75Mt/yr as pure H₂
- Additional 45Mt/yr as part of a mix of gases
- Equivalent to 3% of global final energy demand
- 47% from natural gas
- 27% from coal
- 22% from oil
- 4% from electrolysis (1% production from renewable energies)

Source IRENA

Renewable and low carbon hydrogen projects worldwide



**Source Acknowledgment
Hydrogen Council**



Scope. This document sets out the approach for certification of equipment, components and systems, associated with the production, distribution, dispensing and use of hydrogen, including gaseous hydrogen dispensing equipment, components and systems for light and heavy-duty vehicles, within the IECEx equipment certification scheme.

Membership includes AU, BR, CA, FR, DE, HU, IT, JP, KR, UK, US

- Manufacturers
- Users
- Regulators
- Testing and Certification Bodies
- Experts from the Standardization side
 - ISO TC 197
 - IEC TC31
 - IEC TC 105 – Chair + Secretary



Meetings

- 26th October 2021
- 27th January 2022
- 9th March 2022
- 22nd August 2023
- **30 May 2024 Singapore + International Conference**

Object of WG19 Work

To extend the Harmonised approach of International Testing and Certification to cover IEC and ISO Standards covering Hydrogen Technologies, beyond explosion protection, in support of the H2 economy including GH2



IECEX OD 290 – Standard Operational Document

IECEX answered an urgent need to provide a harmonized way of certifying H2 dispensers + Equip, via WG19

- 1 Scope
- 2 References
- 3 Standards to be used
- 4 Summary of the IECEx certification process
- 5 Requirements to be met by ExCBs and ExTLs
 - 5.1 Applications
 - 5.2 Acceptance of ExCBs and ExTLs
 - 5.3 Ignition hazard assessment and project plan
 - 5.4 Compliance with the technical requirements of the standards
 - 5.4.1 Protection technique standards
 - 5.4.2 Product standards
 - 5.5 Acceptance of third-party data
 - 5.6 Acceptance of manufacturer's data
- 6 Requirements of manufacturers
- 7 Treatment of equipment, components and systems for IECEx certification
 - 7.1 Treatment of equipment, components and systems associated with gaseous hydrogen, other than hydrogen fuel dispensers
 - 7.2 Treatment of equipment, components and systems associated with gaseous hydrogen fuel dispensers
- 8 Clarity of equipment covered by IECEx certification
- 9 Marking for IECEx Certification

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Annex A aligns with the ISO/FDIS 19880-2 - Fueling stations — Part 2: Dispensers and dispensing systems

Hydrogen powered vehicles becoming a reality



Tokyo, Japan



Wisebaden, Germany



AU CSIRO's Clayton campus, Vic



Völs, Austria



January 18, 2024



MEHAIR Places Order for 20 ZeroAvia ZA600 Hydrogen-Electric Engines

Regional operator targets retrofit of Cessna Caravan platform to drive clean flight

Aviation embraces H2
(Maritime Energy Heli Air Services) India's premier Seaplane service servicing flights across the Indian subcontinent

Traditional Areas – Areas where Flammable and Combustible materials may be present

IECEX provides a single global solution for assessment + Certification of Equipment/Services/Persons



- Key Role in the new Emerging Hydrogen and Fuel Cell Economy
- According to World Energy Council by **2025**, hydrogen strategies can be expected to cover countries representing over **80%** of global GDP
- Logical extension to IECEx past coverage of Ex Equipment in Hydrogen areas
- **IECEX Expert WG 19 “Hydrogen Technologies”** current focus:
 - Personnel Certification of Competence according to **ISO TC 197** and **IEC TC 105** Standards (eg ISO 15916 *Basic considerations for the safety of hydrogen systems*)
 - Certification of Equipment associated with Hydrogen dispensing systems

IECEX + ISO TC 197 Cooperation

IECEX Application to the Hydrogen Technologies beyond Explosion Protection, use of ISO TC 197 “Hydrogen Technologies” Standards, examples:-

INTERNATIONAL
STANDARD

ISO
19880-3

First edition
2018-06

**Gaseous hydrogen — Fuelling
stations —**

**Part 3:
Valves**

*Carburant d'hydrogène gazeux — Stations-service —
Partie 3: Vannes*

INTERNATIONAL
STANDARD

ISO
19880-1

First edition
2020-03

**Gaseous hydrogen — Fuelling
stations —**

**Part 1:
General requirements**

*Carburant d'hydrogène gazeux — Stations-service —
Partie 1: Exigences générales*

INTERNATIONAL
STANDARD

ISO
19880-5

First edition
2019-11

**Gaseous hydrogen — Fuelling
stations —**

**Part 5:
Dispenser hoses and hose assemblies**

Establishing and Fostering Relationships



Founded in Bonn, Germany, on 26 January 2009, the International Renewable Energy Agency (IRENA) is an intergovernmental organization that supports countries in their transition to a sustainable energy future, and serves as the principal platform for international co-operation, a center of excellence, and a repository of policy, technology, resource and financial knowledge on renewable energy.

IECEX / IRENA Cooperating as part of the Global Alliance for Decarbonization of Industry (AFID) including in the area of Quality Infrastructure to support the immerging Green Hydrogen Economy:-

- Use of existing infrastructure, eg Standards / Testing + Certification / Metrology
- Prevent duplication of standards systems
- Joint Conference IECEX / IRENA / ISO 28 September 2023, Bonn Germany
- IEC + IECEX participation in the IRENA Panel session at COP 28, December 2023 Dubai

Global Issues require International Solutions

Participation within Established partnerships –

The Effective vehicle



IECEX: 30,000+
Certificates issued to date covering H2:
- Equipment
- Services
- Personnel Cert.

Over 100 Certification Bodies participate

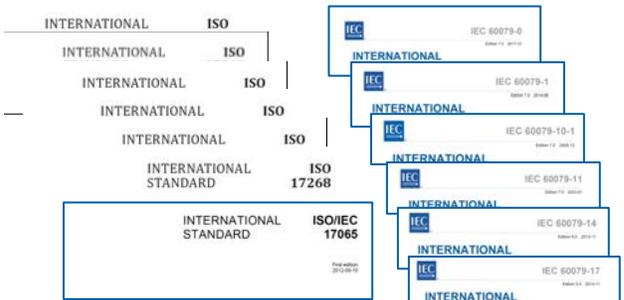


International Approach ensures **Safety**, Performance + **Sustainability** are fully addressed **for the Global Community**

Single International Approach instills **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





20 | IECEX International
24 | Hydrogen Conference

In partnership with:



Hydrogen Council

IRENA
International Renewable Energy Agency

Clean pathway to a sustainable future

Standards and conformity assessment covering equipment and services to support hydrogen production and use at scale

Concorde Hotel Singapore, Singapore – 29 May 2024



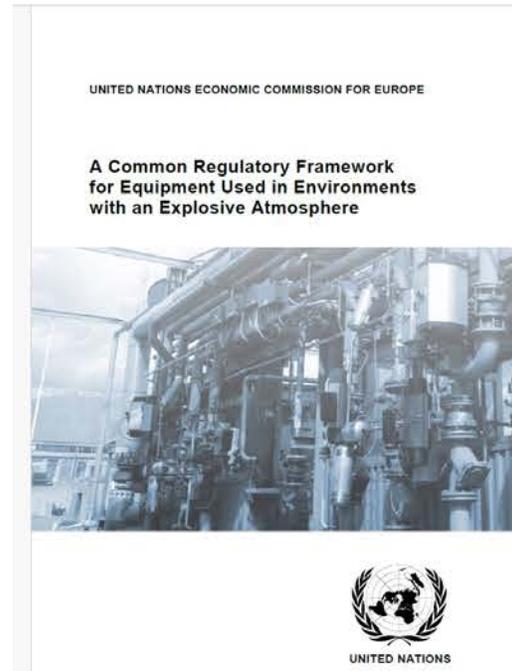
IECEX 2024 International Hydrogen Conference – 29 May 2024, Singapore

<https://www.iecex.com/meeting-and-events/2024-iecex-hydrogen-conference/>

Funded by IECEX

Free admission – no charge

Partner Organizations to present



- Promote a global approach to Quality Infrastructure (QI) for H2 industries, including GH2
- Promote use of existing International Standards and International CA Systems
- Promote United Nations “Common Regulatory Arrangements” 2nd edition publication in which calls on UN Member States to use IEC and ISO Stnds and IECEX when regulating areas involving flammable/combustible materials

IEC's Quality Assessment System, IECQ



IEC Quality Assessment System, IECQ:

Covering: Environmental Claims Ecodesign, Carbon Footprint Verification
Electronic Component supply chains



Currently 26
IECQ
Certification
Bodies offer
IECQ
Certification



IECQ Value Proposition

IECQ instils trust by providing confidence of Environmental and Technical Claims made by Organizations

Originally formed in 1970s to cover *Electronic Components, assemblies, materials and related processes* in support of Supply Chain Management – IEC thru the Conformity Assessment Board (CAB), during 2023, took the decision to enable IECQ Environmental CA Services to be offered as a **Horizontal Service Offering** to all industries, following 3 years of work via IECQ WG14 “*Green Approach*” in consultation with IEC TC 111 and Other CA Systems.



IECQ WG 14 – Green Approach



Terms of Reference - IECQ WG 14:

To investigate and develop necessary documentation for the integration of the Green Approach including Fuel Cell EPDs within the IECQ Schemes and Programmes and to act as a **coordination role for IEC Conformity Assessment Matters and link with TCs related to the Green Approach**, as requested by CAB.

Marie-Elisabeth dOrnano – CONVENOR, IECQ Immediate Past Chair

MC, CAB Member

Paul Turner – GB, IECQ Chair

Peter Lee – AU, CAB Member

Pierre Selva – FR, CAB Member

Shawn Paulsen – IEC VP, CAB Chair

Thorsten Arnhold – DE, CAB Member

Nickolay Fayzrakhmanov – RU, CAB Member, IECQ expert

Christophe Garnier – FR, IEC TC 111 Chair

Miyuki Takenaka – JP, IEC TC 111 expert and Vice Chair

Andrea Legnani – IT, TC 111 expert

Cherisse Craig – GB, IECQ expert, BSI

Chris Allabush – GB, IECQ expert, Rolls Royce

Dave Ryan – GB, IECQ expert, Rolls Royce

Eliz. L.N. Lee – Chinese Taipei, CTECCB, IECQ

Hai-Yen Wang - Chinese Taipei, IECQ Expert, TUV Nord

Jaehak Jung – KR, IEC TC 111 expert

Jing Wang – CN, IECQ expert, CEPREI

Jo Vann – GB, IECQ expert, GE Aviation

Jérôme Reysson – FR, IECQ expert, LCIE

Ki-Seuk Lee – KR, IECQ expert, KTL

Kiyoshi Saito – JP, IEC TC 111 expert

Liang Zhan – CN, IEC TC 111 expert

Marco Angelo Intalan – UAE, IECQ expert

Moro Chen – CN, IECQ expert, SGS

Nick Lin – Chinese Taipei, IECQ expert, TUV Rheinland

Sean Luan - Chinese Taipei, IECQ expert, TUV Nord Asia

Takako Hiruta – JP, IEC TC 111 expert

Tamash Mezossy – RU, IECQ expert, Certification Russian Register

Tim Lee – CN, IECQ expert, Intertek

Walter Jager – CA, IEC TC 111 expert

Yoshiaki Ichikawa – JP, IEC TC 111 expert

Yun Teng – CN, IEC TC 111 expert

Chris Agius – IECQ Executive Secretary

Steve Allan – IECQ Business Manager

Mike Roy – IECQ/IECEX Special Projects



IEC's Environmental CA Services

CAB Decision 53/25 – IECQ CA services relation to Environmental Services Supporting the Circular Economy (From June 2023 Geneva)
The CAB, noting the documents CAB/2345/R and CAB/2345A/CC, the presentation (CAB/2361/MTG) and the discussion during the meeting, **approved** the request from IECQ to make its Approved Process Scheme, relating to “Environmental Services Supporting the Circular Economy”, namely, eco-design, verification of claims relating to environmental footprint of products, and Hazardous Substance Process Management (HSPM) scheme, **available to areas beyond the electronic component supply chain.**

To Address the urgent need for an Internationally Harmonised Approach, with credibility, to independent verification and validation of Environmental Performance Claims

As a result, IECQ Name change:

From: “IEC Quality Assessment System for electronic component, IECQ”

To: “IEC Quality Assessment System, IECQ”

IECQ Web site redevelopment due to go live December 2023 www.iecq.org

IEC Basic Rules (IEC CA 01 updated to reflect the major change)

Press Release <https://www.iec.ch/blog/greenwashing-industry-now-able-provide-independent-proof-environmental-claims>



IEC Quality Assessment System, IECQ

(**IEC Quality Assessment System**) a worldwide approval, certification and verification system providing an Internationally harmonized approach to:

- Environmental services to support a circular economy (*Available to all industries*);
 - Hazardous Substances (existing HSPM Scheme)
 - Ecodesign certification to IEC 62430
 - Carbon Footprint Verification according to ISO 14067
- Quality assessment of electronic components, assemblies and related materials and processes (*IECQ Traditional Services*)
 - Approved Component Schemes, eg Traditional, Avionics, Automotive
 - Approved Process Schemes, eg Nuclear Supply Chain, Information Security Management Systems



CA Services 2 sides to IECQ: Environmental /Traditional

Environmental Services supporting a Circular Economy

Hazardous Substances

Ecodesign IEC 62430

Carbon Footprint Verification



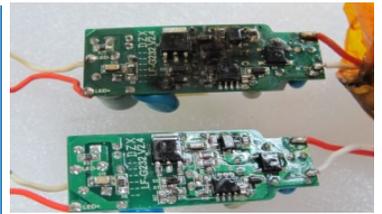
IECQ Environmental CA Services being offered to **All Industries** not just electronic components, due to **CAB Decision 53/25** (from June 2023 mtg)

Services to the Electronic Component Industries

- CA Services supporting supply chain management
- CA services supporting electronic component manufacture

Components

Process



Avionics ADHP



Other IECQ CA Services to the electronic component industries

- Electronic Component Distributors,
- Automotive + Railway Sectors
- Nuclear Industry supply chain – ISO 19443
- Testing Laboratory Qualification
- IECQ CB Auditor Training and Qualification
- Others



IECQ HSPM Cert – An example of direct use of IEC Conformity Assessment for Regulations - RoHS (Hazardous Substances)

IEC QUALITY ASSESSMENT SYSTEM (IECQ)
covering Electronic Components,
Assemblies, Related Materials and Processes
For rules and details of the IECQ visit www.iecq.org

IECQ Certificate of Conformity
Hazardous Substance Process Management

IECQ Certificate No.:	IECQ-H BSI 11.0005	Issue No.:	5	Status:	Current
Supersedes:	IECQ-H BSI 11.0005 Issue 4	Issue Date:	2020/01/07	Org. Issue:	2011/02/18
CB Reference No.:	H566747 IECQ	Expiration:	2023/02/17		

Applicable to:

- European Directive 2011/65/EU ("RoHS – Restriction of the use Of certain Hazardous Substances") in electrical and electronic equipment. Including all published amendments
- China – RoHS 2 2016-01-21 (Management Methods for the Restriction of the Use of Hazardous Substances in Electrical and Electronic Products)

Carven Technology (Wuxi) Co., Ltd
No. 28, Donghong Road, GuanLin Town
Yixing, Wuxi
214251, Jiangsu
China

The organization has developed and implemented Hazardous Substances Process Management procedures and related processes which have been assessed and found to comply with the applicable requirements for IECQ HSPM organization approval which is in accordance with the Basic Rules IECQ 01 and Rules of Procedure IECQ 03-5 "IECQ Hazardous Substances Process Management" of the IEC Quality Assessment System for Electronic Components (IECQ), and with respect to the IECQ Specification:

- IECQ QC 080000:2017 - Hazardous Substance Process Management System Requirements

This Certificate is applicable to all electronic components, assemblies, related materials and processes for the following scope of activities :

Manufacture of Printed Circuit Boards (PCB)

- Attached Schedule: none

Issued by the Certification Body: **BSI**

Kitemark Court, Davy Avenue
Knowlhill, Milton Keynes MK5 8PP
United Kingdom

Authorised Person:
Paul Turner



Origins – 2005 to address Hazardous Substances in electronic component supply – expanded to all sectors

While the original need was to address EU RoHS, IECQ HSPM was developed to cover any Regulations relating to the control of Hazardous Substances associated with electrical/electronic product components.

The example shown here, the IECQ HSPM Certificate, covers both EU RoHS and the China RoHS **Regulations**.

Ongoing annual surveillance Auditing required – All Locations visited.

Identifies manufacturers that have controls in place to prevent Hazardous Substances entering the manufacturing + supply processes.





Carbon Footprint Verification – IECQ WG 14 Green Approach + Collaboration with IEC TC 111

- Now providing **Verification Statement** on Carbon Footprint Declarations, using ISO 14067



		IEC QUALITY ASSESSMENT SYSTEM (IECQ)	
<small>For rules and details of the IECQ visit www.iecq.org</small>			
IECQ Verification Statement Carbon Footprint of Product			
IECQ Certificate No.:	IECQ-V IECQDEMO 23.0001	Issue Date.:	2024/01/24
Expiration:	2027/01/23		
CB Reference No.:	EXAMPLE - Carbon Footprint of Product		
Example for Carbon Footprint Claim Company X			
<small>XYZ Street Address, XYZ Town/City Address, Australia</small>			
The organization has developed and implemented procedures, and related processes which have been assessed by the IECQ Body, according to IECQ 03-1 and ISO/IEC 17029, issuing this statement and found to comply with the applicable requirements of the IECQ Approved Process Scheme (IECQ 03-2) and in respect of standard(s) or specification(s):			
<ul style="list-style-type: none"> ISO 14067:2019 (Ed 1.0) - Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification CFP-PCR, e.g., Climate change - PCR (Product Category Rules) 			
Product/Service:	Description of Product / Service		
Carbon Footprint of Product per Functional Unit:	The CFPP per Function Unit Value		
Carbon Footprint Study Report:	Reference to Carbon Footprint Study Report		
Additional Information:	Carbon Footprint of Product Additional Information as required.		

Verification according to ISO/IEC 17029
Use of ISO 14067
Collaboration with IEC TC 111
Caters for future publication of IEC 63372

And Other Standards:

INTERNATIONAL
STANDARD

**ISO
14067**

First edition
2018-08

Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification

Gaz à effet de serre — Empreinte carbone des produits — Exigences

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

Purpose: To provide an International approach to independent Verification that an Organisation has applied ISO 14067 in determining their Product Carbon Footprint Claim





IECQ Nuclear Supply Chain Certification Compliance to ISO 19443 – Management System requirements for Organisations supplying goods and services to the Nuclear Industry



Certifies an Organisations Management System Process with **ISO 19443**

ISO 19443 uses ISO 9001 QMS as a basis

Addresses goods and services that are Important to Nuclear Safety (ITNS)

A new Service of IECQ – First 5 Certificates issued



INTERNATIONAL
STANDARD

ISO
19443

First edition
2018-05

News Alert: - COP28 reports of the signing of a pledge to triple use of Nuclear Energy by 2050 as part of the replacement of reliance on fossil fuels

Details Schedule/Agenda Registration



IECQ 2024 Annual Meetings to be held in Brisbane 15 – 18 April 2024.

JASANZ International Conference to be held

IEC / JASANZ International Conference

April 18, 2024. Brisbane

Building Trust in Environmental Services – supporting a Circular Economy

TENTATIVE PROGRAM

09:30 – 10:00	Registration
10:00 – 10:10	Welcome and Introduction
10:10 – 10:45	Key Components of Effective Supply Chain & Role of Compliance
10:45 – 11:15	Current and Emerging International Environmental Requirements and Obligations
11:15 – 11:45	Coffee/Tea break
11:45 – 12:15	Control of Hazardous Substances to satisfy National and Regional Regulations, e.g., EU RoHS Directive (Global Issue)

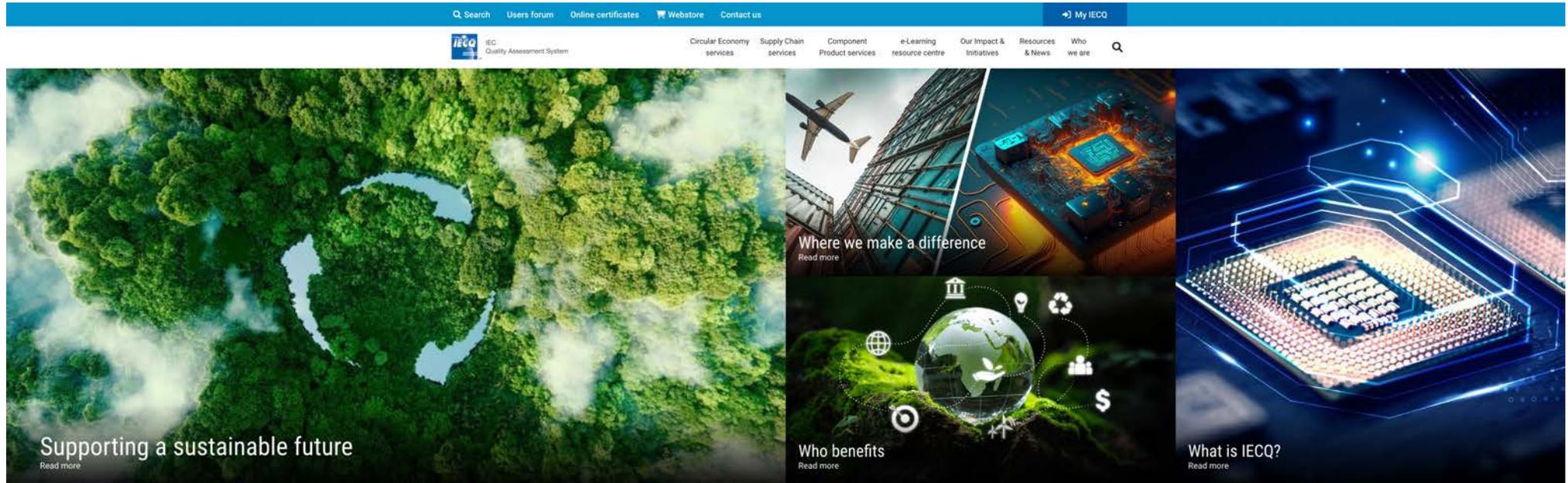
We use cookies on this site to enhance your user experience

By clicking the Accept button, you agree to us doing so.

Accept No, thanks



Dec 2023 Christmas Present : New IECQ Website – Essential for the new Environmental CA Services – www.iecq.org



The world of IECQ

An animated video that shows the breadth and scope of IECQ work
Watch to find out more about the IECQ Services in support of Supply Chain Confidence and a Circular Economy.



Download video

Available with subtitles, simply click on the cc icon.



Download video

Available with subtitles, simply click on the cc icon.

New approach website with a customer driven focus

Thank You