

The background of the slide features a hand pointing towards a glowing, futuristic circular interface. This interface has concentric rings and a large, 3D white checkmark in the center. The word "Standard" is written in a white, stylized font across the bottom of the circular graphic. The overall color scheme is dominated by deep blues and bright cyan highlights.

IECRE Conformity Assessment System

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IEC: Not just a Standards writing Body!

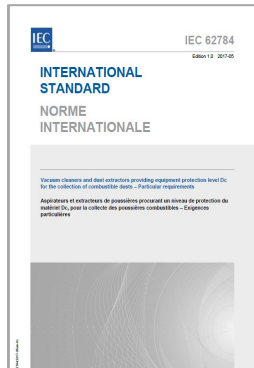
Two sides of the same coin



IEC: Not just a Standards writing Body!

The 2 Sides of the coin

IEC Standards set out
“Standardised Requirements”



Standards
Development
and
Maintenance

IEC

Conformity
Assessment
to relevant
Standards

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



IEC System for Certification of Equipment Used in Renewable Energy Applications



Why IEC Standards and conformity assessment?

Harmonized international consensus standards
throughout RE industry

Harmonized conformity assessment

Harmonized interpretation

Reduced risk

Peer assessment

Transparency

Mutual acceptance

Broad stakeholder engagement

Unique RE international CA system

A background image showing a wind turbine on the left and a row of solar panels in the foreground, slightly out of focus. The sky is a clear, pale blue.

IECRE

The IEC System for Certification to Standards Relating to Equipment for Use in Renewable Energy Applications (IECRE) **aims to facilitate international trade** in equipment and services for use in the renewable energy sectors while maintaining the required level of safety and performance.

To achieve this goal, it:

- operates a single, global certification system
- aims for acceptance by national/local authorities or other bodies requiring and benefiting from certification
- makes use of high-quality international standards and allows for continuous improvement
- facilitate mutual recognition between certification bodies and test labs

IECRE operates a single global conformity assessment system addressing 3 sectors

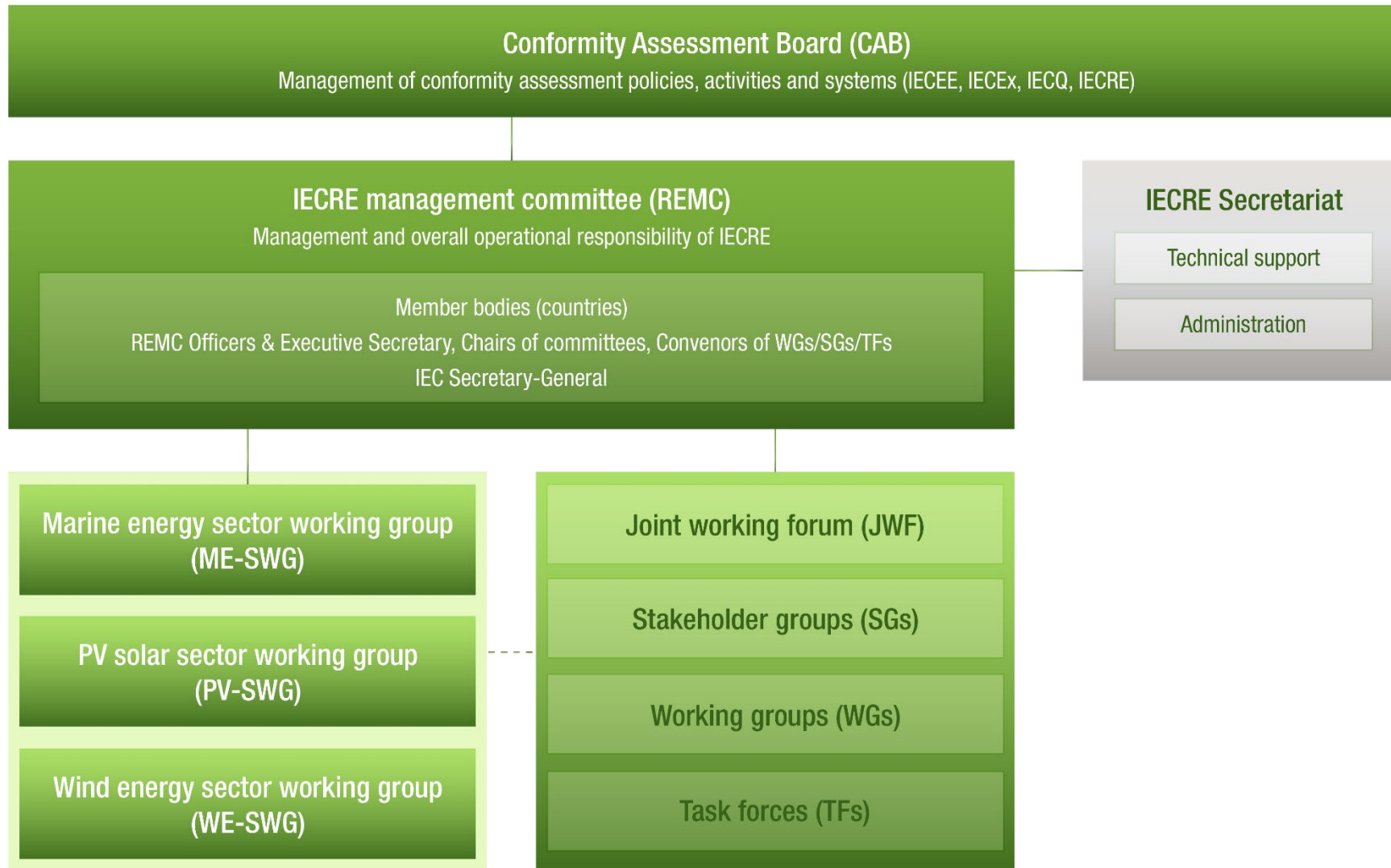
- Solar photovoltaic (PV) Energy
- Wind Energy
- Marine Energy



How does the IECRE system work ?

- IECRE itself does NOT certify. The IECRE assures through a systematic approach that participants issuing IECRE deliverables are qualified
- Qualified registered participants are competent to assess RE equipment and projects
 - RECBs (RE Certification Bodies)
 - REIBs (RE Inspection Bodies)
 - RETLs (RE Test Laboratories)
- Competence validation through regular, revolving peer assessment
- Transparency
- Influence for all stakeholders
 - All stakeholders have a voice (RECBs, REIBs, RETLs, OEMs, End Users)
 - All national member bodies have a vote
 - All participating member bodies recognize & accept IECRE certificates

IECRE Structure



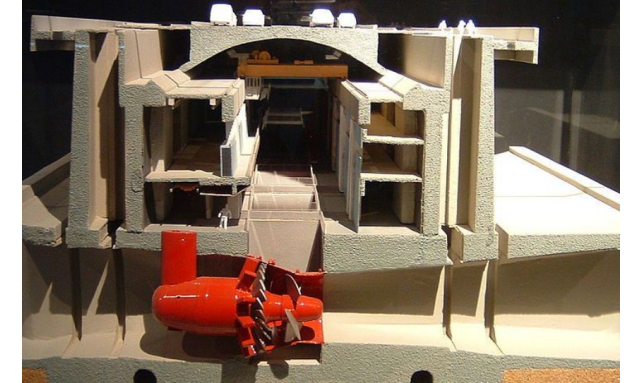
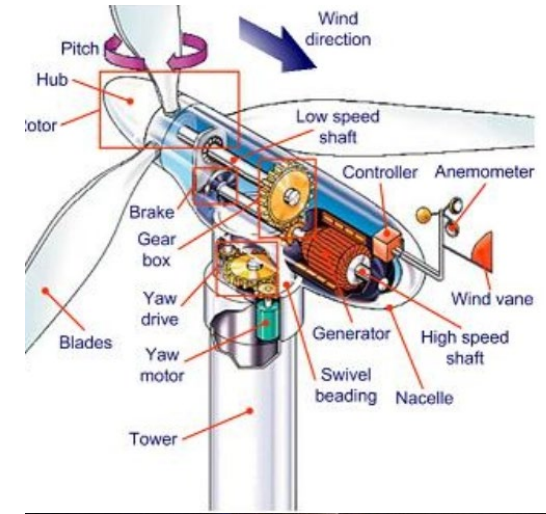
RE power plants face unique exposures

- Min. 20 years design life may result in challenges given the direct environmental exposure to power generation devices
- The “energy sources” are not continuously available 24/7
- wind turbine: Wind loads (incl. gusts), icing, wildlife etc.
- PV power plant: Wind loads, snow loads, hail, temperature, sand abrasion, irradiation, wildlife etc.
- marine power plants: Water current, salt, wildlife etc.
- Each installation is unique as it must fit the geology and geography of its location, and in addition, the design criteria need to meet demand (one size does not fit all!)



IECRE Evaluations

- Reliability depends on a system design of many components
- Each component contributes to the successful interaction of the system:
 - Wind: blades, bearings, gearboxes, generators, towers, foundations, controllers, etc.
 - PV: panels, actuators, support structures, inverters, cables
 - Marine: wave/current/tidal energy converters



RE supply chain, where CA is used



Wind:

- Blades
- Bearings
- Gearboxes
- Towers
- Panels
- Actuators
- Controllers
- Converters
- Foundations
- Cables
- Grid connection
- Etc.

Photovoltaic:

- Panels
- Inverters
- Connecting cables
- Trackers (optional)
- Cables
- Cable conduits
- Controllers
- Inverters
- Foundations
- Grid connection
- Cleaning machines
- Etc.

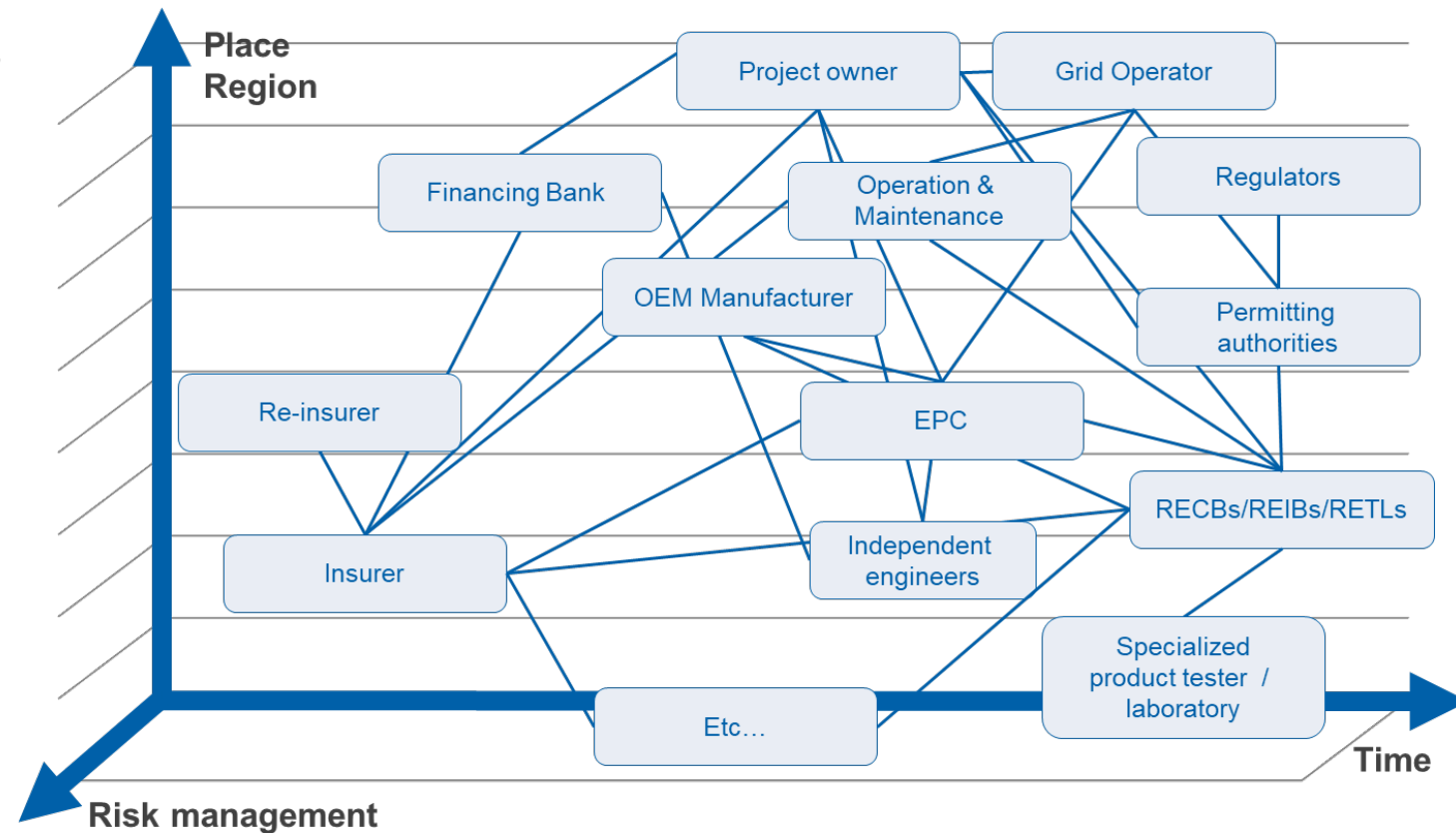
Marine:

- Blades
- Bearings
- Gearboxes
- Towers
- Panels
- Actuators
- Controllers
- Converters
- Foundations
- Cables
- Grid connection
- Etc.



IECRE Stake Holders

- OEMs, EPCs
- RECBs, RETLs, REIBs
- Independent Engineers (IEs)
- End Users
 - Developers
 - Operators
 - Owners
 - Banks
 - Insurers
 - Grid operators
 - Regulators
- Etc.



Courtesy of EXXERGY

What is the motivation for different stakeholders to make use of the IECRE system?

• OEMs, EPCs	Level playing field, mutual acceptance
• RECBs, REIBs, RETLs	Expanded market, increased value, proven proficiency
• Independent Engineers	Market, value, proficiency
• End Users	
– Developers	Consistency, quality, resale value
– Operators	Quality, reliability
– Owners	Risk management, performance, resale value
– Banks	
– Insurers	
– Grid operators	Grid compliance, reliability
– Regulators	Safety, code compliance

IECRE Participating Countries

Country	Name	Voting member	Marine energy	Solar energy	Wind energy
 Australia	Joint Accreditation System of Australia and New Zealand (JASANZ)			1	
 Belgium	CEB-BEC		1		1
 China	Certification and Accreditation Administration of the People's Republic of China (CNCA)			1	1
 Denmark	IEC National Committee of Denmark				1
 France	LCIE by Delegation from the IEC NATIONAL COMMITTEE of FRANCE		1		1
 Germany	IEC National Committee of Germany		1	1	1
 India	Bureau of Indian Standards			1	1
 Italy	CEI - Comitato Elettrotecnico Italiano		1	1	1
 Japan	IEC National Committee of Japan		1	1	1
 Korea, Republic of	IEC National Committee of Korea, Republic of			1	1
 Netherlands	IEC National Committee of Netherlands		1		1
 Saudi Arabia	SASO (Saudi Standards, Metrology and Quality Org.)			1	1
 Spain	IEC National Committee of Spain			1	1
 United Arab Emirates	Ministry of Industry and Advanced Technology (MoIAT)			1	
 United Kingdom	UK Committee for IECRE		1		1
 United States of America	USNC/IECRE		1	1	1

Showing 1 to 16 (Total 16 entries)

IECRE Facts



- **16** participating countries
- **11** Renewable Energy Certification Bodies - **RECBs**
- **32** Testing Laboratories – **RETLs**
- **3** Inspection Bodies – **REIBs**
- **3** registered Customer Testing Facilities - **RECTFs**
- Year end 2023, the RECBs have issued 297 Wind energy Type Certificates, 265 Component Certificates and 412 Design Evaluation Conformity Statements in total.

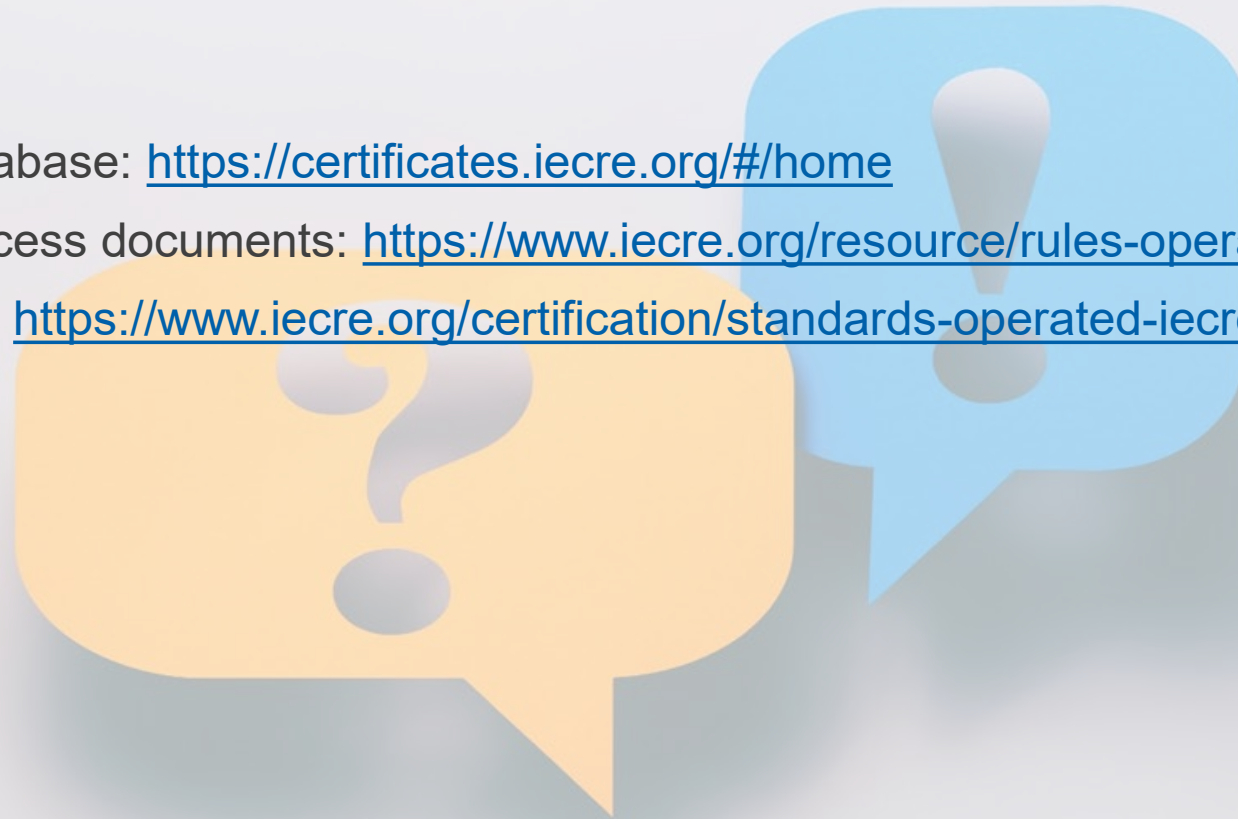
IECRE there is much more to discover

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

IECRE Certificate Database: <https://certificates.iecre.org/#/home>

IECRE Rules and Process documents: <https://www.iecre.org/resource/rules-operational-documents-guides>

IECRE Overall Scope: <https://www.iecre.org/certification/standards-operated-iecre>



The background of the slide is a photograph of Lake Geneva at dusk. A tall, vertical column of water, resembling a fountain or a waterfall, rises from the right side of the lake. In the foreground, a small wooden boat is on the water. The middle ground shows a marina filled with many sailboats. The background features a forested hillside with a few buildings and distant mountains under a sky with colorful clouds.

Thank you