“Reducing risks through standards & certification”

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Jonathan Colby
Founder & President
Streamwise Development, LLC

ETIP Ocean webinar

The Role of Standards & Certification

International Standards and Technical Specifications

- Are **consensus-based** with input from experts globally
- Ensure a uniform, **best-practice approach** is applied
- Use a **common "language"** to communicate
- Enable direct technology comparisons

3rd-party Verification, known as Certification

- Improves both the terms of, and access to, **financing and insurance**
- Utilizes an **independent entity** with expertise to verify compliance
- Provides the **highest level of confidence** while reducing risk
- Reduces barriers to global markets

IEC TC 114 – Marine Energy Standards

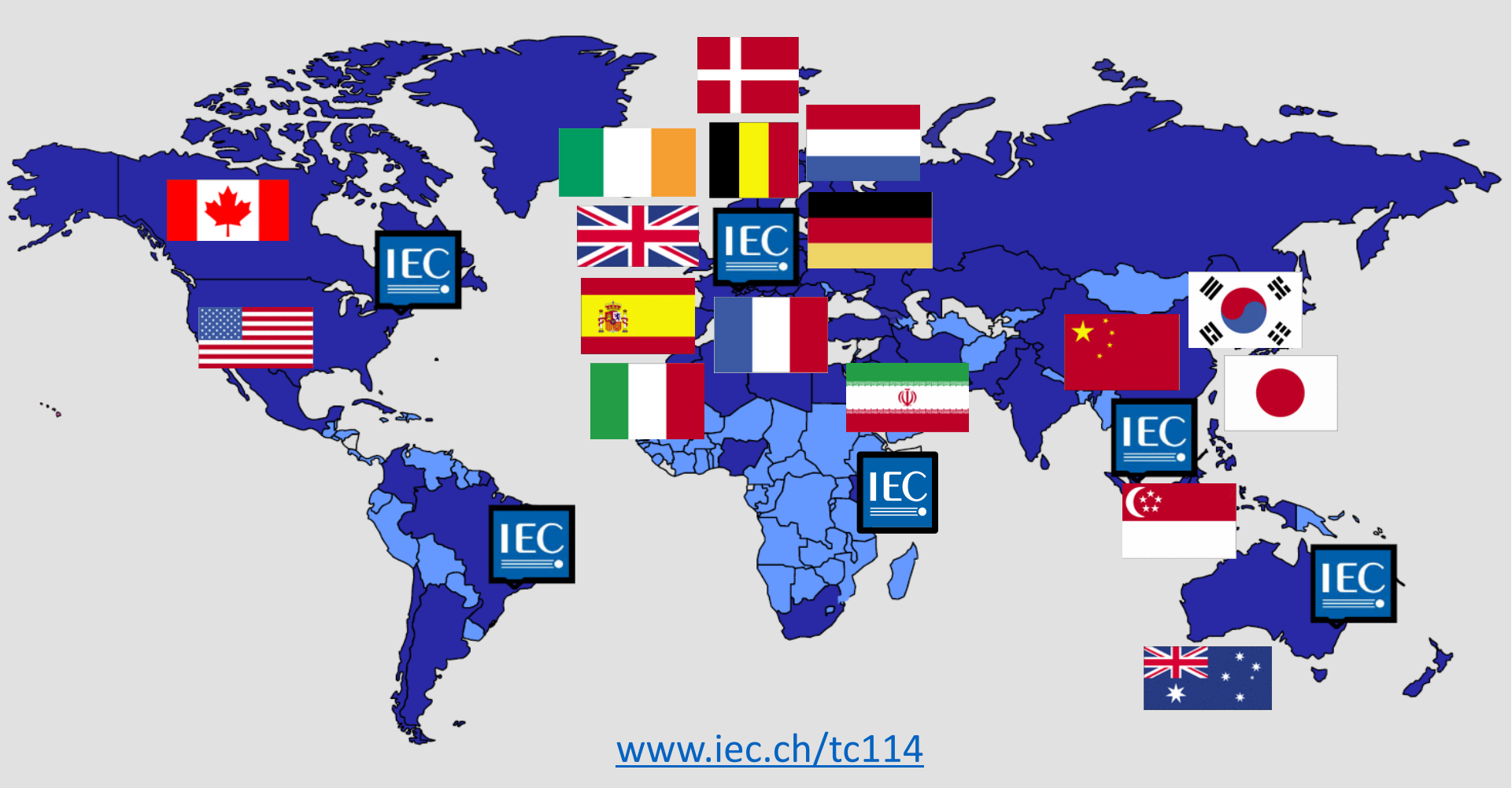
IEC Technical Committee (TC) 114

"Marine energy - Wave, tidal and other water current converters"

- 200 Subject Matter Experts
- 29 Countries (National Committees)
- 18 Working Groups
- **Publicly available Vocabulary for Marine Energy (IEV Part 417)**
- Advisory Group on Alignment (Turbulence, Accuracy, Classification, etc.)

- Liaisons with:
  - IEC: TC 82 (Solar Photovoltaic); TC 88 (Wind Energy); Others
  - ISO: TC 43/SC 3 (Acoustics); TC 108/SC 5 (Condition Monitoring)
  - **International Energy Agency Ocean Energy Systems (IEA-OES)**
  - International Towing Tank Conference (ITTC)

IEC TC 114 – Participating Members (17)



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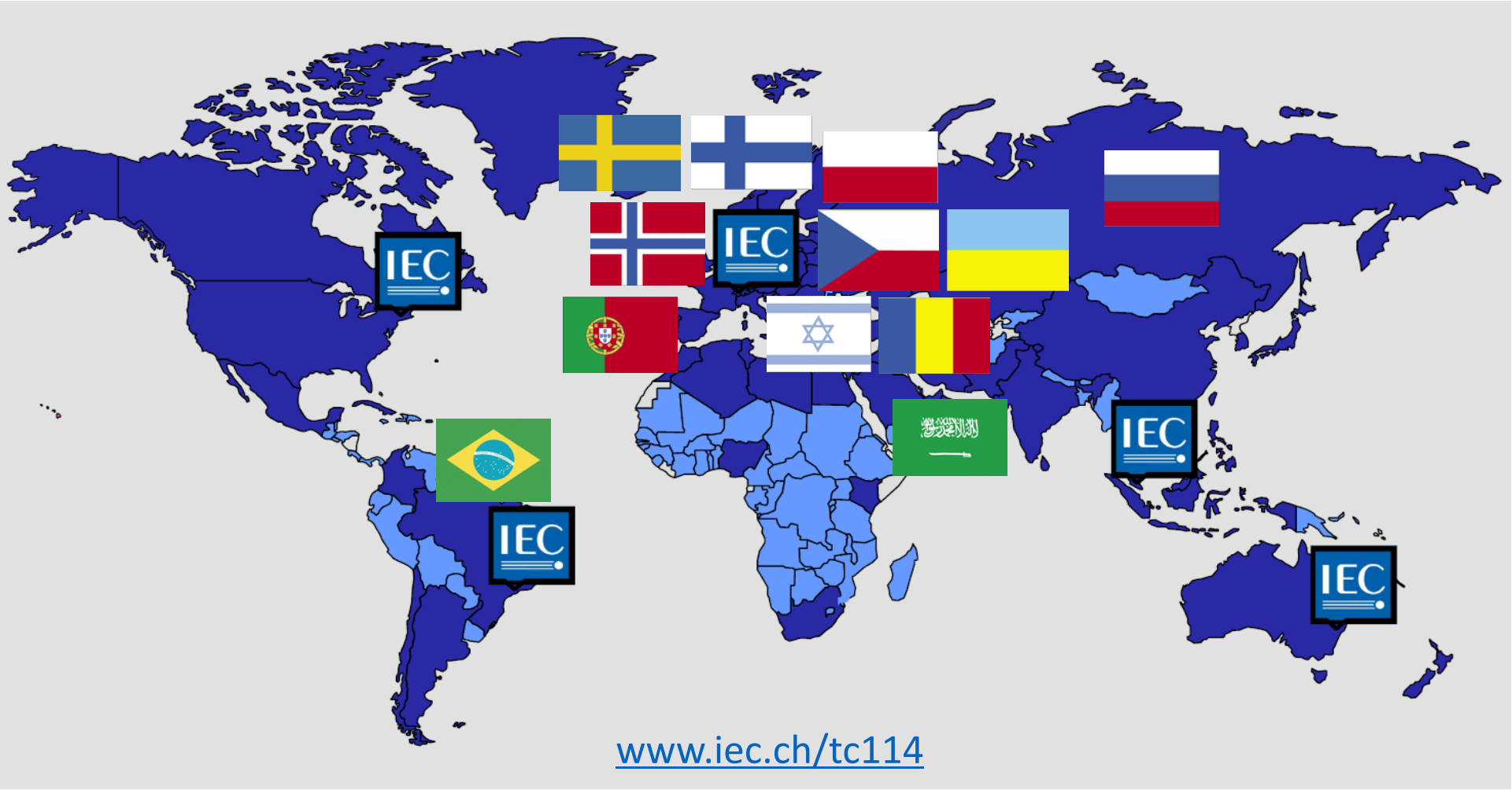
IEC TC 114 – Observing Members (12)



www.iec.ch/tc114

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IEC TC 114 – Resource Agnostic Standards

Number	Abbreviated Title	Edition	Publication Year
62600-1	Vocabulary	2	2020
62600-2	Marine Energy Converter Design	2	2019
62600-3	Measurement of Mechanical Loads	1	2020
62600-4	Technology Qualification	1	2020
62600-10	Moorings	2	2021
62600-30	Power Quality	1	2018
62600-40	Acoustic Characterization	1	2019
62600-41	**Biofouling Characterization**	**1**	**Target 2025**

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IEC TC 114 – Resource Specific Standards

Number	Abbreviated Title	Edition	Publication Year
62600-20	Ocean Thermal Energy Conversion (OTEC) Design	1	2019
62600-100	Wave Energy Converter (WEC) Power Performance	1	2012
62600-101	Wave Energy Resource Assessment	1	2015
62600-102	WEC Power Performance at a 2nd Location	1	2016
62600-103	WEC Pre-prototype Device Testing	1	2018
62600-200	**Tidal Energy Converter (TEC) Power Performance**	**1**	**2013**
62600-201	Tidal Energy Resource Assessment	1	2015
62600-202	TEC Device Scale-Testing	1	2022
62600-300	River Energy Converter (REC) Power Performance	1	2019
62600-301	River Energy Resource Assessment	1	2019

IECRE – Certification

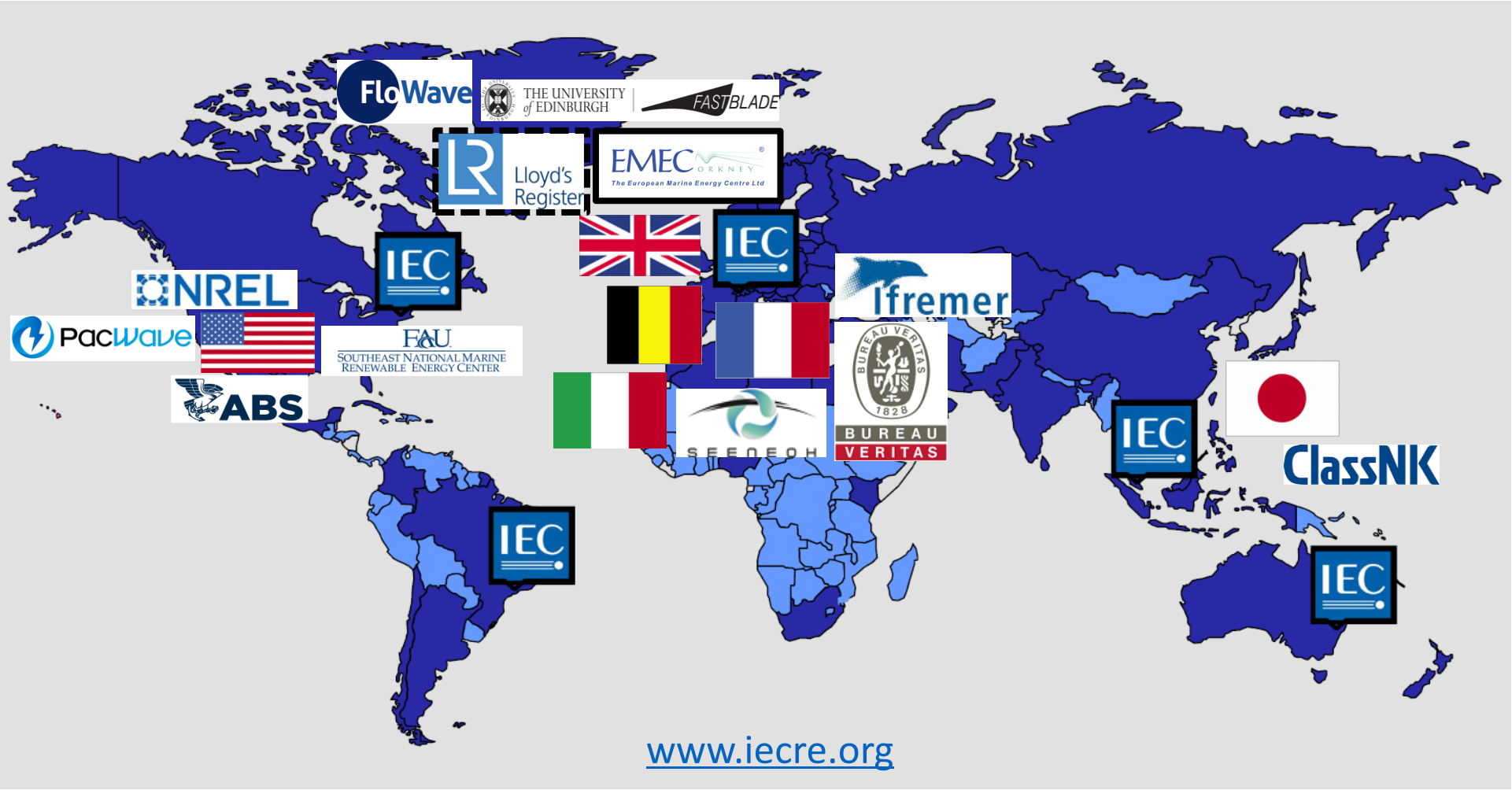
Certification (3rd party verification) to consensus-based International Standards can reduce risk, improve market access and support the commercialization of the Marine Energy industry

IECRE System: Marine + Solar PV + Wind

- Three Sector Working Groups (SWGs)
- **6 Member Bodies (countries) in Marine Sector**

- Test Reports, Conformity Statements, Feasibility Statements
- Certificates (Prototype, Component, **Type**, Project)
- Renewable Energy Certification Bodies (RECBs)
- Renewable Energy Test Laboratories (RETLs)
- Renewable Energy Inspection Bodies (REIBs)

IECRE Marine Energy (ME) Sector



IECRE Test Report (RETR)

IECRE Test Laboratory (RETL)

- EMEC, UK
- Recognized within the IECRE with a scope in the IEC TS 62600-200

Tidal Energy Converter Developer (i.e., Customer)

- Verdant Power, US
- TriFrame™ at the Roosevelt Island Tidal Energy (RITE) Project, NY, NY

Result

- EMEC provided 3rd-party verification of compliance to IEC TS 62600-200
- Issued first RETR: IECRE.ME.TR.TPP.21-00001-R0
- Cover letter is publicly available; Full report is protected

Brief Summary – Reduce Risk!

IEC TC 114 Technical Specifications and Standards

- Ensure a common language
- Codify global best practices
- Provide the detailed “How to”

IECRE Conformity Assessment System

- Harmonizes rules for testing and certification activities
- Reduces barriers to trade and enables market access
- Increases confidence in technology

Streamwise
DEVELOPMENT, LLC

Thank You

Jonathan A. Colby

Founder & President

Streamwise Development, LLC

streamwisedev@gmail.com


Credit: Jonathan Colby