

A wide-angle photograph of a sunset over the ocean. The sun is a bright, glowing orb in the upper center, partially obscured by dark, silhouetted clouds. The sky is a mix of orange, yellow, and blue. The ocean in the foreground is covered in small, choppy waves, with the sun's light reflecting off the water's surface.

## How IEC standardisation and certification schemes can be applied to your technology

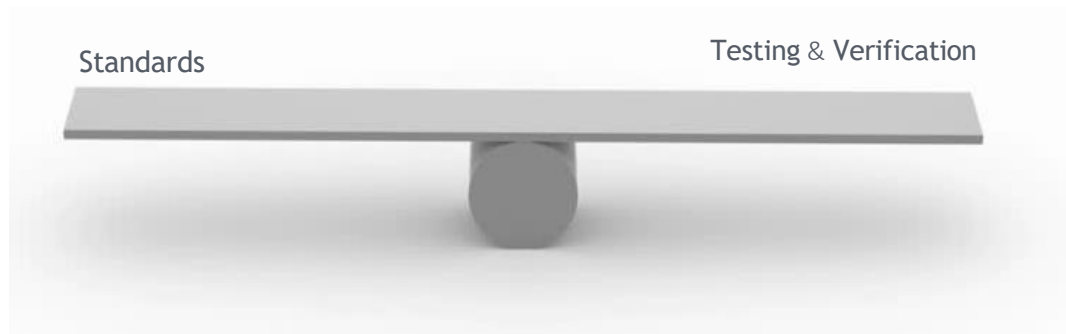
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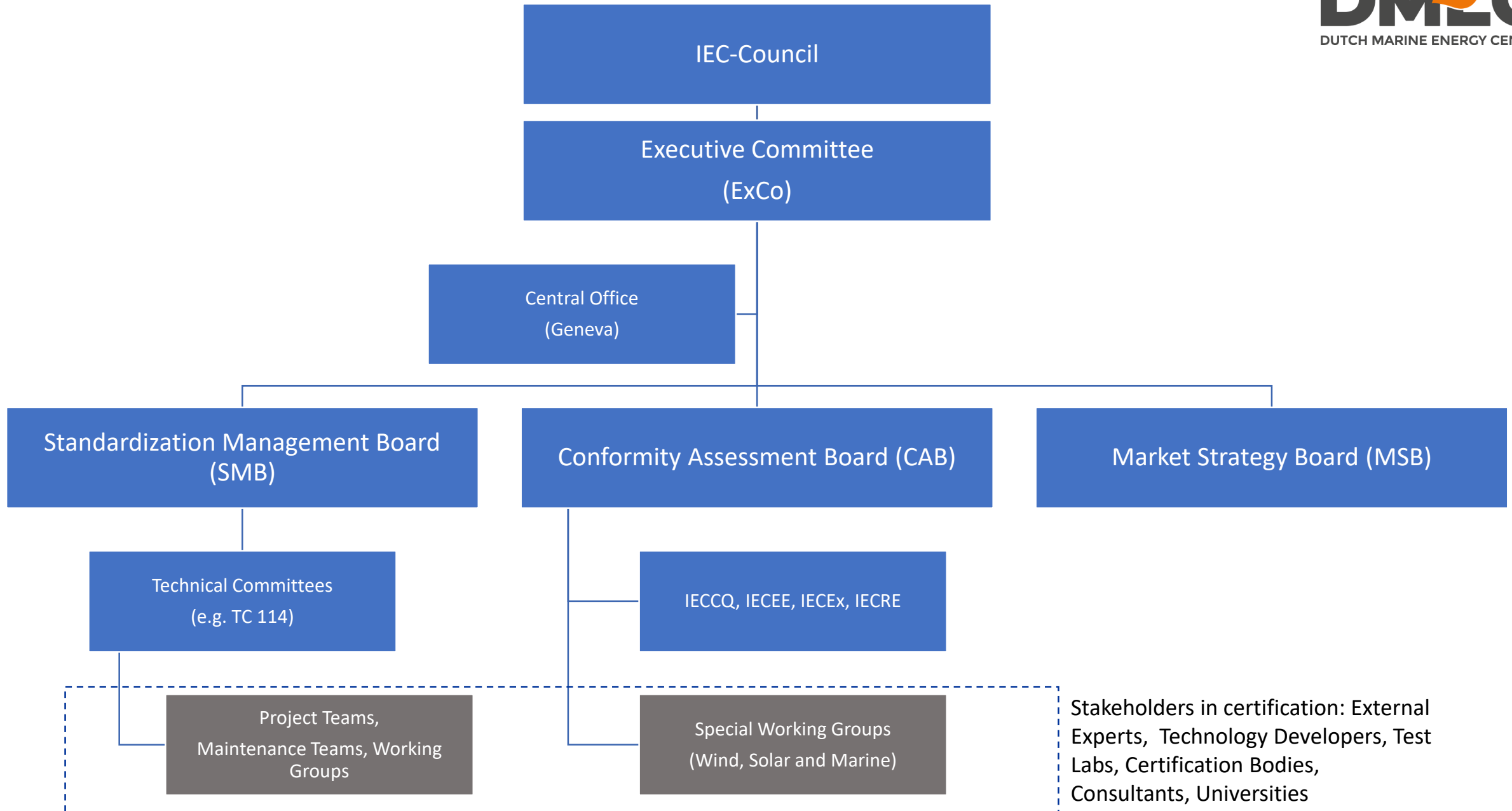
**Interreg**   
North-West Europe  
**OPIN**  
European Regional Development Fund

**Interreg**   
North-West Europe  
**Marine Energy  
Alliance**  
European Regional Development Fund

# Conformity Assessment under IECRE

- IECRE is a third party Conformity Assessment System based on International Standards and Technical Specifications prepared by the IEC (International Electrotechnical Commission) for equipment used in renewable energy (RE) applications.
- Conformity assessment demonstrates that specified requirements of equipment or services are fulfilled.





# Advantages of IECRE

- Internationally recognized system
- Standardized, harmonized and transparent procedures for testing and reporting
- Based on principles of international consensus
- Created by and for the sector
- Reciprocal acceptance between test labs and certification bodies
- Raises market exposure
- Opportunity for new market services
- Assurance of technical competence, integrity and quality

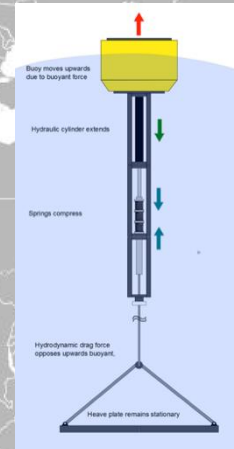


# Reciprocal acceptance between test labs and certification bodies

Test reports for Power Performance obtained in UK, issued by EMEC  
CS issued by. DNV-GL, BV, or LR



Conformity Statements for Technology Qualification and Design Assessment obtain in Germany, issued by DNV-GL, BV, or LR



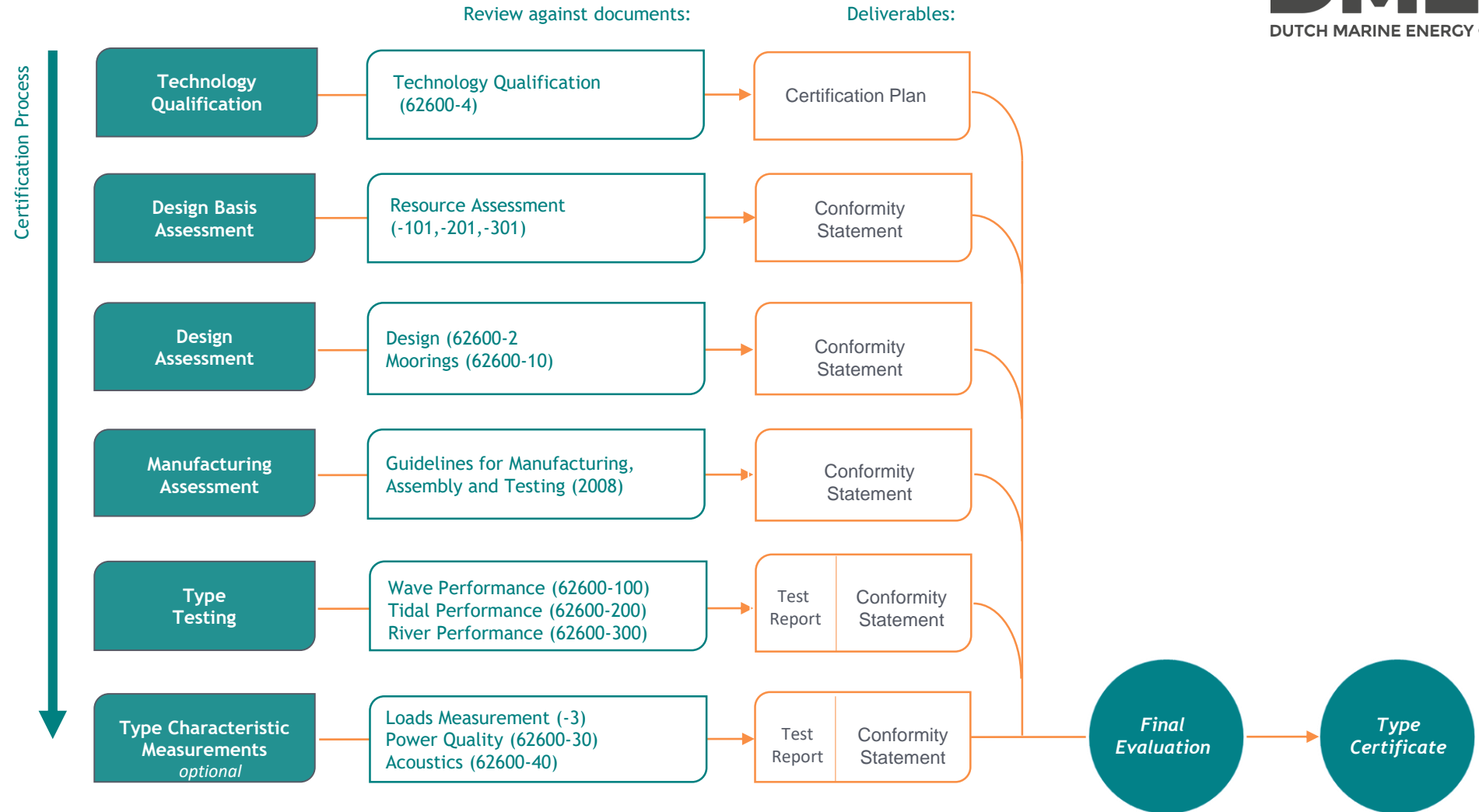
Manufacturing Assessment obtain in Japan, issued by ClassNK





| Generic   | Wave   | Tidal                                    | Rivers                                 | OTEC   |
|---|--|--|--|--|
| <div>-1</div> <div>Terminology</div>              | <div>-100</div> <div>Performance</div>             | <div>-200</div> <div>Performance</div>   | <div>-300</div> <div>Performance</div> | <div>-20</div> <div>OTEC Design Assessment</div> |
| <div>-2</div> <div>Design Requirements</div>      | <div>-101</div> <div>Resource</div>                | <div>-201</div> <div>Resource</div>      | <div>-301</div> <div>Resource</div>    |  |
| <div>-3</div> <div>Loads Measurements</div>       | <div>-102</div> <div>2<sup>nd</sup> Location</div> | <div>-202</div> <div>Scale Testing</div> |  |  |
| <div>-4</div> <div>Technology Qualification</div> | <div>-103</div> <div>Scale Testing</div>           |  |  |  |
| <div>-10</div> <div>Moorings</div>                |  |  |  |  |
| <div>-30</div> <div>Electrical Power</div>        |  |  |  |  |
| <div>-40</div> <div>Acoustic</div>                |  |  |  |  |

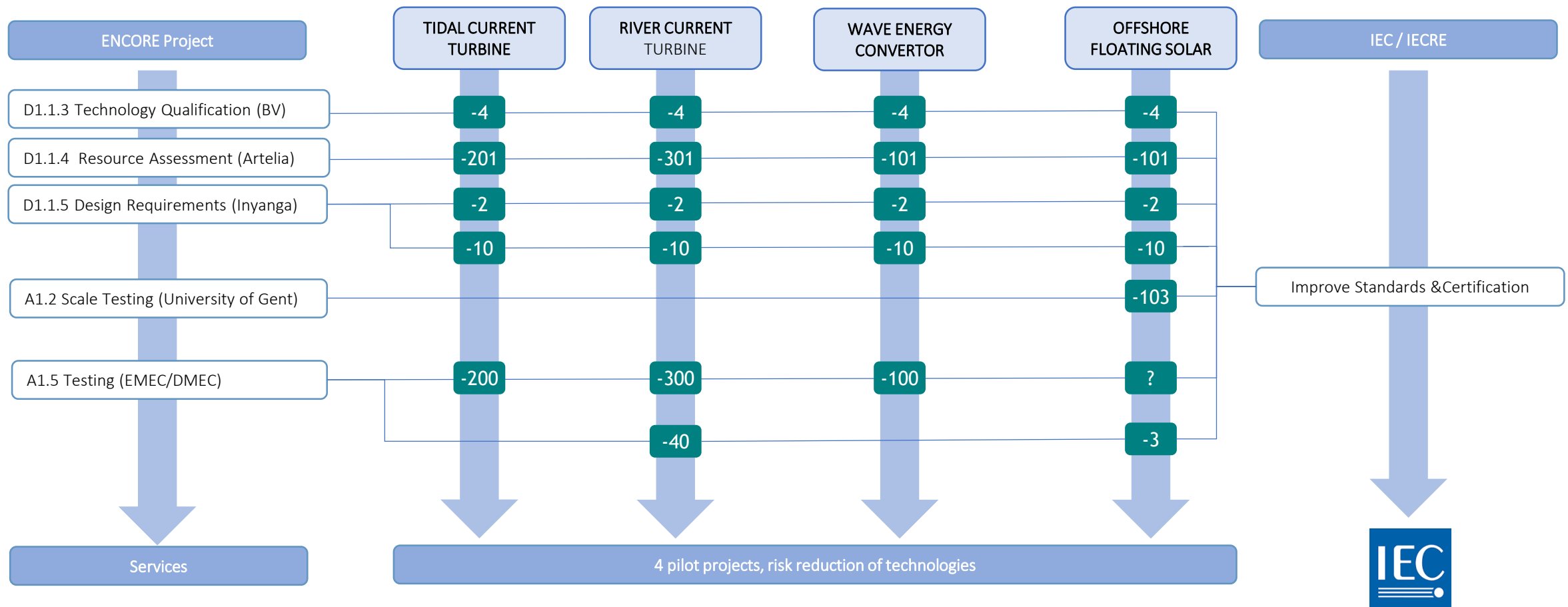
# Type Certificate (IECRE)



**Conformity Statements** are issued by a Certification Body (CB)

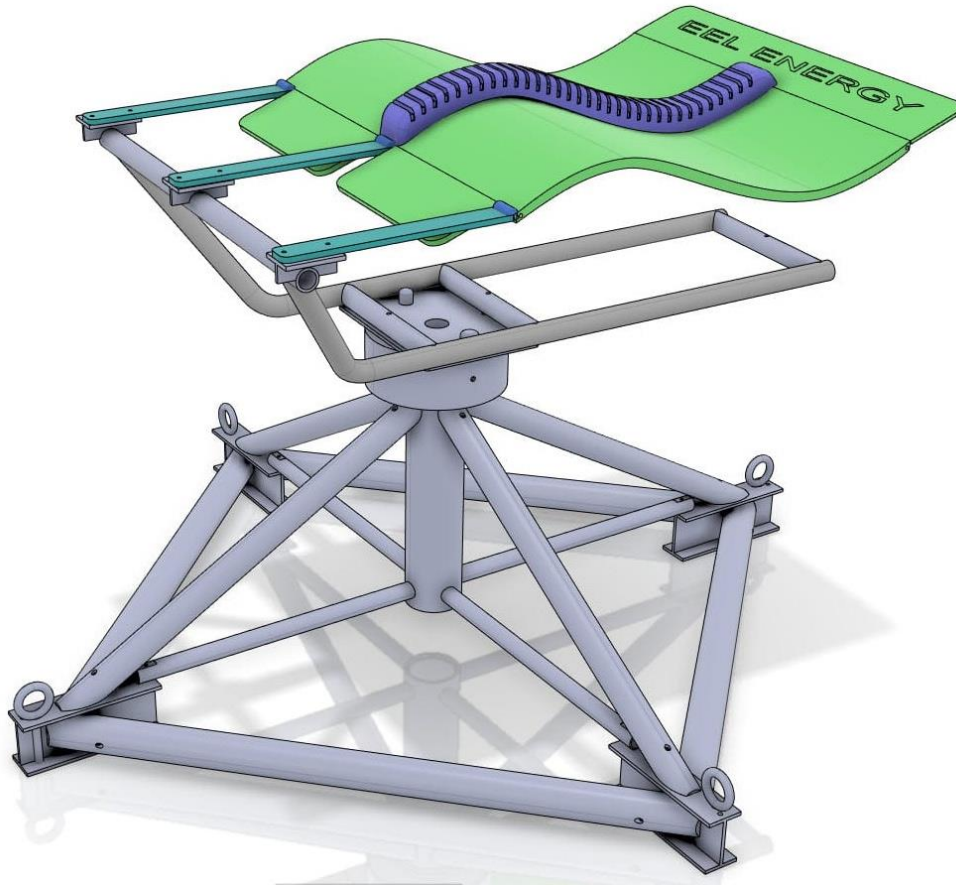
**Test Reports** are issued by a Test Lab (TLs)

# Applying standards in the Encore project





# Technology Qualification workshop EEL-Energy



**Workshop with experts from Lloyd's Register, EMEC and DMEC**

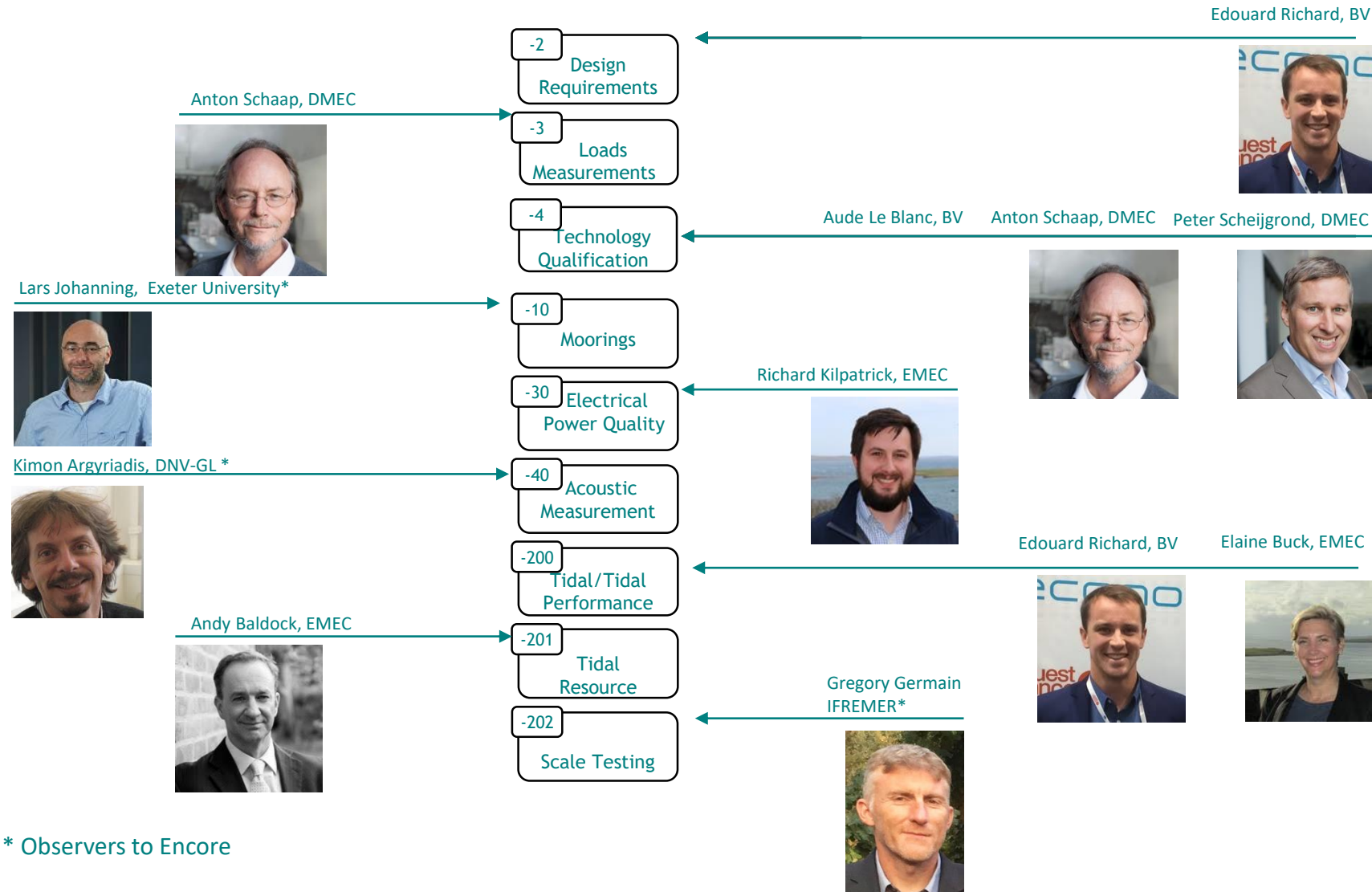
**Benefits:**

- new look from external experts on all parts of the design
- Very detailed risk assessment
- Understanding interactions between sub-systems and impact on risk

**For improvement:**

- minimum requirement should be a completed design at TRL5+
- Perhaps too high level of detail?
- workshop took long time.

# How do we communicate with IEC?



# Get involved in IEC:

- To get access to early market intelligence
- To focus your innovation
- To enable global export of your technology
- To get access to commercial funding