

Development of International Standards and Certification schemes for Marine Energy Technologies

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 Report on workshop in France

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Author

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Revision history

REVISION	DATE	AUTHOR	ORGANISATION	DESCRIPTION
V0	22/06/2017	Loïc Aballéa	Bureau Veritas	First draft report
V1				
V2				
V3				

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1. Attendance

Name	Society	Signature	Retourner
Ziad TARABAY	Affaires Maritimes		Yes
Marc LEBAS	Affaires Maritimes		No
Mickaël PATETTA	Affaires Maritimes		No
Hervé LAMBIOT	AKUO Energy		No
Alain PADET	AXA Corporate Solutions		No
Gillaume GAUTHIER	BARDDOT Group		Y
Loïc ABALLEA	Bureau Veritas	(Present)	No
Olivier BENYESSAAD	Bureau Veritas	(Present)	YES
Jonathan BOUTROT	Bureau Veritas		X
Nicolas LARIVIERE-GILLET	Bureau Veritas		X
Laura-Mae MACADRE	Bureau Veritas		X
Pascale COURCELLE	BPI France		No
Eric MASSART	Caisse des Dépôts		No
Clémence GERMAIN	Caisse des Dépôts		
Nicolas GERARD	EDF		Yes
Franck SYLVAIN	EEL Energy		X
Yann-Hervé DE ROECK	France Energies Marines		X
Raphaël COQUEL	HydroQuest		X Y
Grégory GERMAIN	IFREMER		X
Xavier RIFFAUD	Ingépar (BPCE)	(Present)	No
Simon DIQUELOU	SABELLA		X
Cyril GIRY	SENECOH		
Jérôme COUGOUL	SENECOH		
Christian BERHAULT	SEM-REV		

Name	Society	Signature	Response
Marlène KIERSNOWSKI	SER		no
Julie DE BREON	Watson Farley & William LLP		no
Sébastien HOFF	Watson Farley & William LLP		no
Lebeau PEMHATHINA	AIPEA / AIPEA		yes
Matthijs Geertzen	NEU/NEC		YES
Boris Fedorovskiy	CRI CA-IV		Yes
BRIGITTE BORNEMANN	Energy Energiedelaktoren.eu		x

2. Meeting location

BUREAU VERITAS, 67-71, boulevard du Château - Neuilly-sur-Seine, France

Meeting Schedule Start: 10:00 - 16:00

3. Agenda

1. Introduction & quick presentation of MRE
2. Presentations on MET-Certified project
 - Standards under IEC/TC114
 - Certification under IECRE ME OMC
3. Discussion
 - Actors involvement
 - Expectations about certification
 - Needs on IEC standards and IEC RE certificates
 - How to participate in IEC and IEC RE ?

4. Introduction & motivation

A quick presentation of MRE technologies has been made by Laura-Mae Macadré, from Bureau Veritas, followed by the presentation of the MET-certified project by Gregory Germain, from Ifremer. Then Martijn Geertzen, from NEN, has introduced Marine Renewable Energy (MRE) standards development within the International Electrotechnical Commission (IEC) and Laura-Mae Macadré has ended with a presentation of the latest developments on certification schemes.

The main subject covered in the presentations was the tidal & current technologies because of the content of the MET-Certified project (8 technologies tested).

27 participants representing a wide variety of stakeholders from the MRE sector were represented during this workshop: bankers, insurers, national authorities, MRE clusters, project developers, technology developers, test laboratories and certification bodies. Societies or organisations represented at this workshop are divided in 8 categories:



5. Presentations

See attached presentation “MET-Certified_workshop_FR.pdf” and “AXA_presentation-MET-Certified_workshop.pdf”.

6. Discussion on involvement

The discussion has begun with Loïc Aballea, from Bureau Veritas, who summarized the MRE insurability and bankability problematic as follows:

Once the project feasibility has been confirmed the project development process should focus on the financing options, the specific requirements and the identification of the most appropriate sources of funding for this kind of specific project. The project risks shall be understood and a risk mitigation strategy shall be designed. Clear and comprehensive information on these aspects (project objectives, project feasibility, project risks and risk mitigation strategy) should be provided to potential financiers as soon as they become available.

The project development process should clarify the extent of the required insurance during the construction phase covered by plant suppliers, construction and installation contractors, as well as during the operating phase. Insurance costs should be included in the project life costing estimates.

Then, L. Aballéa invited the participants to present the company/organization and to share their needs and expectations on standards and the developments of a project for banking sector.

Alain PADET / AXA (see attached presentation “AXA_presentation-Met-Certified_workshop.pdf”)

M. Padet has presented the vision of insurers on MRE projects. There is a priority on medium to long term projects, compared to short term projects involving a concentration of risks. Insurers can cover different project phases such as construction and operations with specific adaptations (compared to an offshore oil&gas project).

There is a strong interest in certification because of its importance for liability and risk assessment. However, if certification undoubtedly helps, it cannot be sufficient. Experience of people remains a key element.

At the present time, there are no standard solutions for insuring EMR assets due to exclusions on classical policies. However, the market is very competitive.

Pascale COURCELLE / BPI France

Pascale Courcelle highlights the importance to rely on insurers to invest. The certification give credibility and confidence to the bankers who are not specialists of the sector but projects feedbacks add value for the investment.

Eric MASSART / Caisse des Dépôts

The Caisse des Dépôts comes earlier in a project than a « classical banker ». Certification can give confidence in the project and support the investment decision. Certification is necessary to start the construction and in certain cases a prototype certificate can be sufficient to start a project (as tidal& current technologies which are not yet mature). Eric Massart takes the example of offshore wind energy projects which will be built in several years. French administration has asked a Project Certificate, however at the investment decision date, the Project Certificate is not already issued.

Brigitte BORNEMANN / Energies de la mer

What is the cost of certification ?

BV: It depends of the model and the certification body. This represents only a small percentage of the total cost of the project.

Is the certification body involved in technology developer/banker discussion ?

BV: usually the Certification Body is not involved in this kind of negotiations except to provide explanations on the certificate delivered.

Xavier RIFFAUD / Ingépar groupe BPCE

In the marine sector, a ship is financed only if the vessel has a Classification certificate and if the bank trusts the certification body.

Boris FEDOROVSKY - GICAN

The certificate is very useful and can protect sub-contractors (liability limitation).

Nicolas GERARD / EDF

In 2008, EDF decided to go to tidal demonstration project in Paimpol-Bréhat and selected Openhydro technology. Subcontractors selection for this project could have been easier and quicker with dedicated tidal standards and certificates.

EDF is interested in the development of dedicated tidal standards for:

- Power curve (see IEC 62600-200)
- Design load cases (see recently published IEC62600-2)
- Electrical security for the workers
- Environmental conditions, marine growth

For future projects, EDF will ask the turbine provider to be already type certified.

EDF is interested in certification on the resource if they are not involved at the beginning of the project (like in Paimpol for exemple).

Raphaël COQUET / HydroQuest

There are 2 farms projects on the Rhône (type certification with BV). The two first projects installed were in French Guyana and in Orléans on the Loire. HydroQuest built the prototypes without specific standards because it didn't exist at this time. For the two next projects, work with standards in MRE is expected.

HydroQuest is also working on marine application, a prototype (work of 3 years , basis design with DNV)

In river, resource assessment is more complicated (less measure than at sea). Associated TC114 standards will be useful.

Certification of the power curve assessment & design will be made and is necessary for commercial and financial purpose.

For the technical team, useful to get the support from a third party to review the design.

Franck SYLVAIN / EEL Energy

EEL Energy is developing an undulating membrane since 5 years and is looking to have a certified prototype to be sure that the technology corresponds to the expectations.

Design certificate and power curve certification is fundamental to show to insurers & investors. The power curve certification is also fundamental to compare technologies.

Simon DIQUELOU / Sabella

There is a need of certification for customer trust and sometimes need support from certification body.

For Sabella, it's an obligation to have a certification of design, power curve and prototype certificates.

Sabella highlights the difficulty to develop a single standard covering different turbine designs.

Guillaume GAUTHIER / Bardot group

Bardot Group is specialized in oil&gas equipment and is coming in MRE sector, especially in OTEC projects. They want to be involved in certification to be credible for clients & customers and to have general rules to follow, to have clear procedures to follow for manufacturing.

For OTEC platforms, existing standards from O&G for some components, no standards for other parts (cold pipe). Interested to have more standards to follow.

For example, Bardot Group developed a MRE system to produce energy without certification. This was complicated to convince (clients, customers,...).

Yann-Hervé DE ROECK / FEM

For resource assessment, a collaborative project can be beneficial. Several partners gather their knowledge, and the result can become the future standard.

Gregory GERMAIN / Ifremer

The last 10 years, more than 20 devices have been tested at IFREMER in Boulogne-sur-mer, notably for concept optimization. In most of the cases, when engineers are coming from oil&gas sector they ask for certification (ISO, COFREAC,...). That's why this is applied in MRE sector.

IFREMER is developing standard test protocols with other labs (round robin tests) and participates in European projects to develop test protocols.

Main challenges are:

- how to test in conditions which are representative of real conditions (turbulence, current,...)
- how to simulate the power take-off system for scaled devices?
- How to consider wake effects?
- how to use the results of a reduce scale to a 1:1 scale?

Hydroquest and other participants confirm that tests at IFREMER were very helpful for the engineering, to know better the device, to discover new phenomenon, to test multiples geometries.

Participants highlight the need for a test site in a protected area for 1:1 tests, in particular for mechanical and electrical tests.

7. Evaluation

MET-Certified Workshop

Monday 19th June 2017

Event Feedback overview

Feedback of 13 people was received.

Organisations: Energies de la Mer, AXA, BARDOT Group, HydroQuest, NEC, AIPEA/AIPIA, Caisse des Dépôts, 2 from Watson Farley & Williams, BPI Financement, EDF and 2 unspecified

1. Please rate the following aspect of the workshop:

Session	1 Poor	2 Average	3 Good	4 Excellent	N/A
MET-CERTIFIED			3.5		
Standardisation			3.5		
Certification			3.6		
Market needs			3.5		

Any comments:

Good mix of standpoints and speakers
 Very clear presentations despite the technicality of the matter
 Very open discussion

2. Please rate the organisation and hospitality:

Logistics & hospitality	1 Poor	2 Average	3 Good	4 Excellent	N/A
Organisation			3.4		
Venue			3.1		
Catering			3		

Any comments:

Very pleasant organization
 French would have been more appropriate
 Room a little bit small

3. What were the two best things about the workshop:

- Knowledge of certification*
- Quality of attendant*
- Interest of the topics*
- Good overview of certification scheme and purpose*
- Insurance point of view very interesting*
- Presentation on insurance*
- Bread and in depth discussions*
- Exchange between the participants*
- Stakeholders with different involvement*
- All actors involved at the same time*
- Clear explanation of the different topics*
- Declination of certification*
- Point of view of bankers*
- Sharing of information*
- Technical and financial precisions due to discussions*

Overall, participants of the workshop have the feeling of clear presentations and a good overview of certification and standardization. The interest of the topics and the diversity and quality of attendants was the main strength, in particular the presentation from the insurance sector. They also appreciate to have all actors involved in an MRE project at the same table and share information that could be useful for everyone.

4. Which two things about the workshop would you change:

- Maybe some practical feedback of certification work based on a real life case could be useful
- More discussion about OTEC
- Lack of communication about standards release

5. How would you rate the workshop overall? (please circle)

Rate from 1 to 5, with 5 being the best/highest score

1	2	3	4 4.5	5
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6. Do you have any other feedback you wish to add?

Thanks to BV for organising

8. Post workshop actions

ACTION / RECOMMENDATION	ASSIGNED TO	DEADLINE
Send minutes of meeting at all participants (and people who were interested in but they can't come)	BV	
Send presentations (MET-Certified / AXA)	BV	
Send feedback on the project to all participants and interested people	BV	