

# Development of International Standards and Certification schemes for Marine Energy Technologies

Deliverable D1.2.1

Report on workshop in Belgium September 13<sup>th</sup>, Ostend

Project No. 2501-020



With the financial support of



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**Revision history**

REVISION	DATE	AUTHOR	ORGANISATION	DESCRIPTION
V3				
V2	8/10	Pieter Mathys	UGent	Completed report WS, still needs rereading and error checking (but complete including evaluation)
V1	14/09	Pieter Mathys	UGent	Completed the post WS actions, still DRAFT version!
V0	13/09/2017	Sarina Motmans	POM	Initial Notes taken at WS

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## 1. Attendance

Registered (*Italic: no show*)

<i>Herman</i>	<i>Annendyck</i>	<i>studieingenieur</i>	<i>EOLY NV</i>
Maarten	Berkhout	Project development director	SeaQurrent
Carl	Bosteels	IT & Innovatiemanager	De Meyer NV
<i>Reinhilde</i>	<i>Bouckaert</i>	<i>Policy Advisor</i>	<i>FPS Energy</i>
Christian	Brouyère	Senior certificates controller	Ccrow
Jo	Cops	Secretary General	CEB-BEC
Dirk	De Meyer	Algemeen Directeur	De Meyer NV
Michel	Dewanckele	project manager	Flanders' Maritime Cluster
Martijn	Geertzen	International standardisation officer	NEN
Jan	Goormachtig	Project Engineer	DEME Blue Energy
Luc	Hamilton	Project manager	Tocado
<i>Jonas</i>	<i>Lagrou</i>	<i>Beleidsmedewerker internationale samenwerking</i>	<i>Provincie West-Vlaanderen</i>
<i>Philip</i>	<i>Lefebvre</i>	<i>Regiodirecteur</i>	<i>ING Regio Oostende-Middenkust</i>
Pieter	Mathys	Innovation manager Offshore Energie	Ugent
Jacopo	Moccia	Policy Director	Ocean Energy Europe
Sarina	Motmans	Coördinator Blue Energy	POM West-Vlaanderen
Steven	Nauwelaerts	CEO	Laminaria
<i>Hans</i>	<i>Pirlet</i>	<i>Afdelingshoofd Beleidsinformatie</i>	<i>Vlaams Instituut voor de Zee (VLIZ)</i>
Yvon	Timmerman	Project Manager	Blue Power Synergy
<i>Leo</i>	<i>van der Klip</i>	<i>Senior Beleidsmedewerker Economie en Duurzaamheid</i>	<i>Provincie Zeeland</i>
<i>Joost</i>	<i>Vanden Berghe</i>	<i>Principal Consultant</i>	<i>DNV GL</i>
Joris	Vanderveken	Zaakvoerder	HydroCatala

## 2. Meeting location

GreenBridge, Ostend

Meeting Schedule Start: 13:30 - 17:30

## 3. Agenda

1. Introduction & motivation of interest/involvement in certification
2. Presentations on MET-Certified project:
  - Standards under IEC/TC114
  - Certification under IECRE ME OMC

### 3. Discussion on involvement

## 4. Introduction, Roundtable & motivation

The workshop started with a extensive introduction and discussion round:

- **Martijn Geertzen: NEN/NEC:** Introduces NEN/NEC and the IEC process. Martijn is responsible for wind, water and solar standardisation at NEC.
- Michel Dewanckele (FMC): cluster representative of service providers.
- Maarten SeaQurrent: technology developer.
- Jo Cops: Director of BEC: TC114 known, not yet member but willing to collaborate if industry interest.
- Joris Vanderveken (Hydrocatale): generic interest in the state of the art of tidal energy.
- Yvon: Blue Power Synergy: technology developer, interested in generic trends.
- Dirk Demeyer (Demeyer): Precision manufacturing: offshore references (Boomlock - Patania) - generic interest.
- Carl (Demeyer): Scoping for precision construction & mechatronics, active from design to maintenance in custom made projects.
- Andrea (Laminaria): Wave Energy Convertor developer, now going to full scale.
- Luc Hamilton (Tocado): Certification big issue for scale up phase of Tocardo.
- Jacopo Moccia (OEE): interested in status of industry, and translation to activities on a European scale.
- Christian (Ccrow): certification software for people (e.g. subcontracting)
- Frank (IMI): technology development of salinity gradient and environmental advice tidal energy licensing.

Participants came were categorized by stakeholder type.

Michel	Dewanckele	Flanders' Maritime Cluster	Cluster rep. of Service providers - (sub)contractors & Technology developers (OEM)
Jacopo	Moccia	Ocean Energy Europe	Cluster rep. of Service providers - (sub)contractors & Technology developers (OEM)
Pieter	Mathys	Ugent	Cluster rep. of Service providers - (sub)contractors & Technology developers (OEM) - Test Laboratory COB & MET CERTIFIED project partner
Sarina	Motmans	POM West-Vlaanderen	Government - provincial - project partner MET CERTIFIED
Jo	Cops	CEB-BEC	National member bodies to IEC(RE)
Martijn	Geertzen	NEN	National member bodies to IEC(RE)
Carl	Bosteels	De Meyer NV	Service providers - (sub)contractors
Christian	Brouyère	Ccrow	Service providers - (sub)contractors
Dirk	De Meyer	De Meyer NV	Service providers - (sub)contractors
Jan	Goormachtigh	DEME Blue Energy	Service providers - (sub)contractors - marine contractors & installation
Maarten	Berkhout	SeaQurrent	Technology developers (OEM)
Luc	Hamilton	Tocado	Technology developers (OEM)
Steven	Nauwelaerts	Laminaria	Technology developers (OEM)
Yvon	Timmerman	Blue Power Synergy	Technology developers (OEM)
Joris	Vanderveken	HydroCatala	Technology developers (OEM)

## 5. MET-Certified Presentations

See [LINK invoegen](#)

## 6. Discussion on involvement

### Service or technology Providers:

- Dirk De Meyer (De Meyer): active in several sectors, good insight on standards (if they exist). For a deepsea mining unit, no standards were available. The Boomlock, which was an add-on to an existing crane mounted on a jack-up vessel, led to several discussions on how to comply with crane standards or norms.

### Cluster representatives (of Service or Technology Providers):

- Michel De Wanckele (Flanders Maritime Cluster): represents + 130 members, active in several transnational projects focussed on LCOE reduction in offshore wind (Inn2Power). Follows generic development in industry and certification.
- Jacopo Moccia (OEE): OEE focus on bankability is high. Three issues are the financial support schemes, the Weighted Average Cost of Capital & standardisation/certification. The ocean energy sector has a lot of SMEs, especially in wave. Resources are scarce (especially financial and HR), which results in strong focus on technology development. Most of the times test protocols are proprietary, which raises the question: "If they claim it works, to which standard are they referring to?". You need

an independent set of criteria, which standards & norms provide. In the oil & gas industry, project developers first show the certification, then the technology. In ocean energy, project developers mainly focus on technology.

- Christian (C-Crow): service provider with offshore certificates for persons who work in a maritime/offshore environment. Tracibility and validity of certificates are important, especially for complex project with several sub-contractors. IMO is applicable to ships, for wind GWO & STCW, additional working at height and/or HUET, BOSIET, OPITO). **Cost of track & tracing certificates is small compared to the danger of not being able to work offshore due to an expired certificate.**
- Frank Neumann (IMI): salinity gradient development (Redstack), advices for small tidal current generators (e.g. SeaWind NL)

#### End user (finance, insurance, project developer)

One person registered, but did not attend the workshop.

#### National Member bodies

- Jo Cops (Director at BEC): BEC is aware of the activities of TC114, but is not aware of company interest. Furthermore, interest from other IECRE sectors as wind & PV to consider Belgian IECREs membership. As for any industry, BEC emphasizes the importance of international recognition and adaptation of certification schemes.

#### Technology developers (OEM)

- Maarten (SeaQurrent, NL): currently works at TRL 4, now working on TRL5. TRL4 was tested at Marin. **After asking which (test)protocol Marin used to test SeaQurrent, Maarten had to admit that he didn't know the exact protocol.** For TRL5 he currently works with Universiteit Groningen as a "an independent third party verification", but does realize that this is no substitute for an (official) CB certification.
- Joris (Hydrocatala): working on in river in stream turbine on the Belgian river Zenne. Has a generic interest in the developments within the sector.
- Luc Hamilon (Tocado): it's important for an OEM that results are independently verifiable and accepted. Tocardo currently needs verifiable certification in TRL 8-9. Ideally these are aligned with typical QA/QC systems, especially for prototypes of one-offs. Luc also raises the question about fish friendliness? How do you measure it and how many mortality of fish is considered acceptable? For in-stream tidal energy, this is more developed than open water tidal energy.
- Yvon Timmermans (Blue Power Synergy). Company focusses on shipbuilding and a proprietary combined wind, wave & tidal modular barge for energy production. Is acquainted with certification in shipping industry, but was unaware of the developments in wave and tidal energy. Research and development is solely performed in-house, mainly due to cost. Hourly rates for a Flemish research institute were considered to be too expensive to perform third party verification.
- Andrea (Laminaria): WEC developer, successfully tested 1/5<sup>th</sup> scale at sheltered locations (nearby Ostend). Now preparing for scaling up at EMEC, which makes this information relevant & timely. Advancing quite fast in terms of TRL 7, with a first array project foreseen in EMEC. **Their scale test at sea didn't had 3<sup>rd</sup> party verification.** At that moment it was not considered, but now they would consider it if they had do it again. At the time, developing the data and getting (scale model) data was the highest priority, instead of simultaneously starting up a new certification process.

#### Marine Contractor (EPCI project developer):

Not present during workshop, but just before the workshop, a Belgian representative of a marine contractor with proven track record in the installation of gravity based tidal energy foundations mentioned that a lot of work has been performed to convince the Marine Warranty Surveyor for the works. **He also asked if there is an applicable norm for the installation (instead type or project certificate or O&M surveillance)?** At the same time he focussed on the difficult phase that tidal energy is experiencing (Cfd's in UK changed, LCOE offshore wind,...), ... Certification really kicks in when the market is maturing.

#### Overall (concluding) discussion

BEC is open to host a test meeting to find common ground, to explore possibilities and facilitate memberships (TC 114 is the low hanging fruit), if there is a clear (insight on) the industry driven demand. BEC requires at least 2 companies to join (no specific requirements, as BEC judges that if the company sees joining as relevant, BEC then considers this company to be relevant). Cost price might be high initially (financial & manhours), but might pay off as currently the norms and standards are being developed. Thus the advantage is twofold: providing input on the development of these standards, which is by definition a consensus mechanism, but also gaining first mover insight about these norms and standards before they are officially published.

A mirror commission of IEC-RE is an option, but Marine Energy is considered too small to carry this (financial) burden: wind and PV should be considered as well. Belgian is currently not a member body, but if it would be the case certification bodies, test laboratories or OEMs/technology developers would be very welcome, as this reflects the existing stakeholders.. **The question is raised if a company proprietary test facility could also obtain accreditation? Question remains unanswered.**

**MET-CERTIFIED partners can claim membership within the project.**

**BEC is willing to facilitate**, if the Belgian knowledge is aggregated in specific working groups that can provide added value.



## 7. Evaluation

At the closure of the workshop, participants were asked to fill out the evaluation form.

Belgium has a small domestic wave and tidal energy resource, and the supply chain is either strongly internationally focused (eg. DEME Blue Energy) or either in relatively low TRL phases. However, the experience from offshore wind and new infrastructure developments (new Coastal Ocean Basin under construction, new developments in maritime test sites) could further support these developments.

At the workshop, unfortunately no certification bodies nor financial/insurance parties were represented.

As BEC is not a member state of neither IEC-RE, nor TC114, no companies were active in the national mirror committees.

However, BEC was convinced to actively participate and was represented by its general director, who provided clear intentions to at least consider and facilitate any steps towards membership of either TC114 (considered to be the low hanging fruit) or IEC-RE (which might need simultaneous involvement of Wind & PV). It was also noted that Jo Cops was contacted directly by IEC-RE chairman Jonathon Colby to consider Belgium's membership of IEC-RE.

The participants scored the workshop quantitatively as follows (point all reduced to maximum score 10):

MET Cert Intro	7,8
Standardisation	7,5
Certification	7,2
Market needs/activity	6,9
Organisation	8,6
Venue	7,5
Catering	7,5
<b>Overall</b>	<b>7,3</b>

The participants scored the following comments

Negative:

- No presence of CB;
- Focus on tidal turbines, what about tidal kites?
- Cold due to airco;
- Lack of structure in presentation
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Positive:

- Good moderation, pleasant interaction (mentioned several times)
- Good interaction (mentioned several times)
- Good overview
- Cases represented by DEME Blue Energy & Tocardo (note: those were preceding the workshop in conjunction with the Blue Growth Summerschool which was hosted in parallel).
- Networking facilities;
- Information sharing (mentioned several times)
- Groupsize was just right, not too big, not too small.
- Clear view of project goals.
- Need for certification existing & relevant.
- Many different stakeholders represented.

- Explanation of the structure of standards & norms.

Suggestions for change:

- Include presentation or viewpoint of CB;
- Seating in schoolstyle (desk for writing / taking note);
- Include some test cases: brief historical examples of how standards were adapted to integrate new technologies in the past.
- Better explanation of MET-CERTIFIED expected impacts.

Generic questions:

- Is there any information of CB that can be shared?

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## 8. Post workshop actions

ACTION / RECOMMENDATION	ASSIGNED TO	DEADLINE
Put up a few Project Posters	POM - UGent	Done (speakers table, room, entrance GreenBridge)
Project project flyers (or use A4 project poster)	PL (Dominique)	NA
Prepare attendance list to be signed	POM - UGent	Done & signed
Prepare Hand-out Materials (printed slides in hand-out style, Agenda, Evaluation Form, business cards)	POM - UGent	Slides were handed out, evaluation forms collected at the end
Prepare stakeholder groups/clusters to categorise participants and discuss	POM - UGent	Done (unfortunately no CB of project developer rep were present although they did register)
Allow for enough time to introduce, discuss and expand on issues	POM - UGent	Done, but didn't took so long as NL, UK, FR as involvement clearly lower
Ask participants if they are alright with sharing their details with the other participants	POM - UGent	Asked (not written), participants list can be distributed with name and affiliation