Verdant Power

by Jonathan Colby, Director of Technology Performance

Development of International Standards

Verdant Power was among the first participants in the marine energy sector. As such, the company experienced early on an absence of resources and discussion on industry best practices as well as a lack of uniform definitions of essential parameters for system performance and other areas. This scenario allowed varying claims on system performance to be made, making comparisons of different marine energy technologies very difficult.

Image: Verdant

While Verdant Power felt it utilized rigorous in-house methods and practices to operate and measure its own technology, there was no generally accepted standard against which to measure its efforts, nor those of its competitors.

Through participation in the IEC, particularly in IEC TC 114: Marine energy - Wave, tidal and other water current converters, and in the publication of IEC Technical Specification (TS) 62600-200, Verdant Power has been able to put forth its insight and experience towards the development of a common language and consensus-based Technical Specifications for the marine energy industry.

Verdant Power has also been able to collaborate with other leaders, in marine and other energy sectors, to share best practices, market challenges and opportunities, developing relationships that continue to advance the industry today.

While significant work continues, a number of critical Technical Specifications have now been published by IEC TC 114. These TS harmonize methodologies to assess the available resource and power performance of marine energy devices, which has greatly assisted in the advancement of Verdant Power's efforts. Further work on a TS for the design of marine energy converters will continue to increase market confidence in the reliability and survivability of marine energy systems, and thus further support commercial success for Verdant Power and other developers.

Finally, the ongoing transition of publications to International Standard from Technical Specification under IEC TC 114 will add further market confidence as updates will be based on feedback from the *in situ* application of these documents. An International Standard is especially critical given the global potential for marine energy and the development and operation of devices around the world.

Conformity Assessment system

Another crucial challenge for the marine energy industry is the lack of an international Conformity Assessment system to provide transportable, 3rd party verification of compliance to the emerging International Standards and Technical Specifications for marine energy technologies. Without such a system, Verdant Power and other developers must rely on Certification Bodies and Test Laboratories in separate markets to provide individual verifications. If they even exist for an emerging industry like marine energy, these certifications and reports are

likely valid only to the specific issuing body and not accepted across countries and markets. This gap has thus led to inefficiencies and increased costs for testing and certification and decreased confidence in the verification of overall system performance, ultimately adding difficulty in securing financing for marine energy technologies and projects.

Through the IEC, Verdant Power and other stakeholders are working to address this situation. Efforts by IEC TC 114, including the six existing Technical Specifications (one additional vote pending), have led to the first published documents of critical importance for the tidal energy industry in this regard.

Additionally, as part of the new IEC System for Certification to Standards Relating to Equipment for Use in Renewable Energy Applications (IECRE), the creation of the Marine Energy Operational Management Committee (ME-OMC) provides the platform required to develop the necessary Marine Energy Certification Schemes.

The ME-OMC, on which Verdant Power's Jonathan Colby serves as Chair, is currently developing the rules for such products as Test Reports, Conformity Statements, and Component, Prototype, Type and Project Certificates.

These deliverables are critical pieces in the ongoing development of an IEC Conformity Assessment System for Renewable Energy equipment, including marine energy, which will provide the necessary framework to ensure that testing and certification done to IEC International Standards and Technical Specifications will be mutually recognized and transportable.

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The new IECRE System will lower the cost of testing and certification. It will ultimately reduce the perceived risk in the marine energy industry, improving the ability of Verdant Power and other developers to obtain necessary financing and bring their technologies and projects to the commercial market.

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About Verdant Power

Founded in 2000 and headquartered in New York, US, Verdant Power is a global leader in the marine energy sector. Through its Roosevelt Island Tidal Energy (RITE) Project in New York City's East River and other initiatives worldwide, Verdant Power has developed industry-leading capabilities in the areas of marine energy systems design and operations; hydrodynamic modeling and analysis; river and tidal resource assessment; and regulatory compliance.
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