

### Wave Energy Prize Rules and Terms and Conditions Public Comment Summary

The following is a general summary of the questions and comments received regarding the Wave Energy Prize Rules and Terms and Conditions during the public comment period of March 13 – March 20, 2015. It is not intended to respond to all specific incoming questions and comments, but to address the general topics of the inquiries received.

The total number of unique comments received during the period was twenty three (23), from seventeen (17) individual sources. Please note that several sources submitted more than one inquiry.

The sources for comment are outlined as follows:

- Academic sources: Two (2) universities submitted a total of five (5) inquiries
- Private industry sources: Thirteen (13) private industry sources submitted fifteen (15) inquiries
- Government sources: No input from government agencies or affiliates was received
- Other sources (individuals with unknown source): Two (2) individuals with an unknown source submitted a total of three (3) inquiries

Questions and associated responses:

#### Q: Can shore, near-shore, tidal and other WEC devices be entered into the Wave Energy Prize?

A: The Wave Energy Prize is designed to focus on deep-water devices. The Wave Energy Prize has chosen wave conditions found on the West Coast of the continental United States due to the large energy resource in this region. Such locations have long term average annual wave energy flux per meter crest width in the range of 17-39kW/m. Only wave energy conversion (WEC) concepts that are designed for operating in these conditions are being considered for entry to the Wave Energy Prize.

### Q: For team registration, will there be a minimum number of team members required to qualify as an official team at the time of registration?

A: No, we do not require a minimum number of team members at registration. Should a team add members after registration, the Prize Administrators should be informed and provided bio information about the additional members.

### Q: I am an American citizen, but would like to have a non-U.S. citizen on my team. Is it possible for him to be on my team as long as I am the Team Leader?

A: To be eligible to win a prize in this competition, members of the team must be citizens or permanent residents of the United States. Individuals who are neither citizens nor permanent residents of the



United States can be included among the team members, but they will not receive any monetary prize, nor will they be reimbursed for travel; however, they will receive acknowledgement by the listing of their names among the winning team members.

#### Q: When will the information provided in the registration application be made public?

A: The information will be made available on the "Teams" page of the Wave Energy Prize public facing website after the acceptance of the team's registration application and after the team has been notified.

### **Q:** How should self-insured entities (like universities) address the liability and insurance requirements in the Terms and Conditions?

A: DOE notes that the liability and insurance requirements were not established independently by DOE but, rather, are required by statute.

### Q: Will the Wave Energy Prize Administrators supply names of insurance vendors who are familiar with the particular requirements established in the Terms and Conditions?

A: No, the Prize will not endorse or mandate the use of specific insurance carriers.

#### Q: How long does it take for a registration application to be accepted?

A: Registration applications will either be accepted or rejected, and the team will be notified within seven (7) business days, as specified in the Wave Energy Prize Rules.

#### **Q:** When will the template for the Technical Submission be provided to the teams?

A: The Technical Submission template will be available to official registered teams (those teams whose registration applications have been accepted) via the team-only secure website as soon as they log in to the site, as specified in the Wave Energy Prize Rules.

#### *Q*: When will seed funding be provided to the Finalists and Alternates, and how will it be distributed?

A: The distribution of seed funding to the Finalists and Alternates will begin following the official announcement of Finalists and Alternates on March 1, 2016. The seed funding will be granted to the Finalists and Alternates in the form of an initial award at the time of the announcement, with subsequent awards throughout the remainder of the Wave Energy Prize.

#### Q: How is the scale of the WEC models determined?

A: The scale is a dimensional scale.



#### Q: Will the Wave Energy Prize stipulate the definition of a "full scale" WEC device?

A: The definition of a "full scale" WEC device will not be provided by the Wave Energy Prize. The full scale concept size is the decision of the Teams.

#### Q: Why does the Wave Energy Prize require numerical modeling simulations?

A: Numerical modeling is required to provide judges with the confidence that Teams understand fully how their device works. Further, if Teams are intending on using advanced control strategies in the Prize, the Judging Panel will be able to assess numerical modeling predictions of MASK Basin performance so as to not penalize these Teams, who will only be allowed limited controls during smallscale testing.

#### Q: Will my Intellectual Property (IP) be protected during the Wave Energy Prize?

A: As stated in the Terms and Conditions, all intellectual property associated with team submissions, as required to participate in the Wave Energy Prize, remains the sole property of the submitting team.

### *Q:* Please clarify the requirements and restrictions regarding the use of controls and the PTO unit in the 1/50<sup>th</sup> and 1/20<sup>th</sup> scale models.

A: Limited control affecting the representative Power Take-Off (PTO) will be allowed in the  $1/50^{th}$  scale model testing, whereas these limits will not be enforced in the  $1/20^{th}$  scale model testing. The numerical modeling results for the full scale concept will be required for both the limited control conditions, as implemented in the  $1/50^{th}$  scale model testing, and the unlimited control conditions, as implemented in the  $1/20^{th}$  scale model testing, and as specified in more detail in the Wave Energy Prize Rules, Appendix B.

### **Q:** Will the Wave Energy Prize make the time-resolved wave resource definition available before 1/20<sup>th</sup> scale model testing by providing a time-series of the waves?

A: Definition of the specific waves, but not the time-series, will be provided to the Finalist and Alternate Teams on March 1, 2016, upon notification of their status following Technology Gate 2.

### *Q:* Will the individual wave climates used for the testing at 1/50<sup>th</sup> and 1/20<sup>th</sup> scale be provided to the teams?

A: Wave climates will be provided for the  $1/50^{th}$  scale model testing on September 30, 2015 and for the  $1/20^{th}$  scale model testing on March 1, 2016.

#### Q: Will energy storage systems be assessed and qualified in the Wave Energy Prize?



A: The Wave Energy Prize is not structured to test energy storage capabilities, but the Technical Submission allows for Teams to describe their energy storage systems. This description will be included in the assessment of the Technical Submission.

#### Q: How will the survivability of a WEC device be scored?

A: The Technical Submission contains information regarding survivability which will be reviewed and scored during the assessment. Survivability will not be tested for in the 1/50<sup>th</sup> or 1/20<sup>th</sup> scale tests.

#### *Q*: How will mooring requirements for the 1/50<sup>th</sup> and 1/20<sup>th</sup> scale WEC models be determined?

A: Though mooring is important, it is not a primary component determining winners of the Wave Energy Prize. Wave Energy Prize Administrators do not expect contestants to design advanced mooring systems.

The small scale testing facilities' personnel and the MASK Basin personnel will work with teams to support a successful mooring strategy during testing. The mooring configuration can rotate with the device.

## Q: Why is there a requirement to instrument the 1/50<sup>th</sup> scale WEC models for the measurement of "motion in all degrees of freedom for each body" during the small scale testing?

A: As the Prize could well be evaluating technologies from teams that have never before performed a wave tank testing program, part of the rationale for including the  $1/50^{\text{th}}$  scale testing is to give teams the opportunity to learn at  $1/50^{\text{th}}$  scale as a rehearsal for the more expensive and challenging test program that is to be performed at  $1/20^{\text{th}}$  scale in the MASK Basin. Correct sensor implementation will be critical to the success of the test programs.

# Q: How has the Wave Energy Prize represented "seven deployment climates typical of deep water locations off of the West Coast of the United States" as stated in the Rules to be used for assessments during the Prize?

A: The Wave Energy Prize has created a single composite wave climate that represents the West Coast of the United States.

### Q: How will equity be maintained between a multi-absorber arrangement and a single point absorber during the calculation of Total Surface Area (TSA) and Representative Structural Thickness (RST)?

A: Each material will have associated multiple load cases and thicknesses to address the differences between structural bodies. TSA and RST estimates will be calculated and summed across all absorber structures, as well as the single large reaction structure.