



Oregon Coast Renewable Energy Challenge

2019 Competition Guidelines



OVERVIEW

- When:** Tuesday, **March 5th from 8:45am - 2:15pm**
Where: Hatfield Marine Science Center Visitor Center in Newport, OR
Who: 3rd-12th grade students from Oregon Coast STEM Hub partner districts

The Oregon Coast Renewable Energy Challenge educates students about renewable energy options currently being investigated along the Oregon Coast and provides opportunities and support for teachers seeking to integrate STEM in their classrooms. At this event, students can bring their wave energy devices, wind turbines, and/or solar devices to the HMSC Visitor Center to test in wave tanks, wind tunnel or under high-powered lights to see which designs produce the greatest amount of energy. Volunteer judges from research and industry will be onsite to interact with students, assess student designs and provide feedback.

TEACHER REGISTRATION LINK: <https://tinyurl.com/OCREC2019>

WHAT TO BRING

1. Student-created renewable energy device (see below)
2. Poster - All entries must be accompanied by a poster display which details the design process and overall cost of the device. Teams of engineering judges will visit the posters and interview each team. Engineering judges' scores will reflect student teams' basic knowledge of energy and the engineering design process, teamwork and communication skills. Posters will be displayed on tables. Teams may bring other documentation such as engineering notebooks, etc.
3. Video/Photo personal release form for each participating student, signed by a parent or guardian. Find this form on pg. 3 of this document.
4. Sack lunches (there are no options to buy lunch at HMSC)

RENEWABLE ENERGY DEVICES

All devices must be student-created. Although "kits" may be utilized in the creation of devices, the more original the design and components used, the higher the score for the device will be. Awards will be given for wind, wave and solar devices based on:

- Functionality of the device (amount of energy produced/ distance traveled, etc.)
- Engineering design and construction
- Innovation
- Incorporation of repurposed materials

WIND

Wind energy devices will be tested in a wind tunnel and must conform to KidWind standards which can be found at: <https://www.kidwindchallenge.org/p/16-rules-judging>

Winning wind turbine designs will have the opportunity to advance to KidWind's National Challenge.

WAVE

Wave energy devices may be no more than 12 cm wide and 20 cm long (depth) due to the constraints of the wave tanks in which they will be tested. Examples of wave energy generators and construction tips can be found at:

http://nnmrec.oregonstate.edu/sites/default/files/we_curriculum.pdf

SOLAR

Solar devices may fall into the category of cars, boats, or other devices (solar oven, etc.). Races will be run to determine fastest boat and car. All devices in this category must be run on solar power only, using no more than two 6-volt solar panels. Boats and cars can be no larger than 30 cm wide and 40 cm long. Each of any other type of solar device must fit into 1 cubic meter.

SUPPORT

Teams must bring their own lunches. The Oregon Coast STEM Hub has limited support available to reimburse schools for substitutes and bussing on competition day. For more information about this opportunity contact tracy.crews@oregonstate.edu.

HOW TO REGISTER

Teachers, please register your teams online at <http://tinyurl.com/OCREC2019>. You will be asked how many students and chaperones you will be bringing to the competition, and how many projects in each category you will be bringing. In order to participate, each student, teacher, and chaperone will need to bring a Photo/Video Release Form (signed by a parent or guardian if under 18 years old). Please **bring these signed forms with you on competition day**.

QUESTIONS

If you have questions, about the Oregon Coast Renewable Energy Challenge, please contact Tracy Crews at tracy.crews@oregonstate.edu.

Video/Photo Personal Release
for Students and Participants in Oregon Coast STEM Hub 2018/2019

I authorize the Oregon Coast STEM Hub and its partners, including Oregon State University and Oregon Sea Grant, acting pursuant to their authority to:

(a) Record me on videotape or audiotape, in photographs, or in any other recorded medium. I understand that these recordings may be used in any medium, including print, World Wide Web, video, or audio.

(b) Over 18: Use my name, likeness, voice, and biographical material in connection with recordings.
Under 18: Use my likeness and voice only. No names will be associated with likenesses.

(c) Exhibit or distribute such recording in whole or part without restrictions or limitation for any educational or promotional purpose, which the Oregon Coast STEM Hub partners cited above and those pursuant to their authority deem appropriate.

I waive any right to inspect or approve the finished medium or the use to which it may be applied.

I represent that I have read and fully understood the above paragraphs and am knowingly and voluntarily executing this release. A parent or guardian signature on this document is required for individuals who are not at least 18 years of age.

Signature

Date

Name (PLEASE PRINT)

Title

Organization

Street

City

State

Zip

Telephone (area code first)

Parent/Guardian signature (if under 18)

Parent/Guardian Name (printed)

Date

For Use by Oregon Coast STEM Hub: Received by _____ Date _____
Intended Use: Professional Development, Classroom and field experience observations, Publicity of project activities