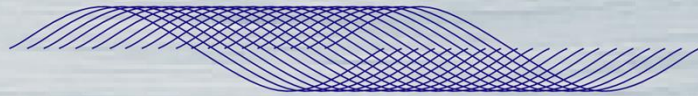


SOUTHEAST CONFERENCE ANNUAL MEETING SEPTEMBER 2013



COLUMBIA POWER TECHNOLOGIES

power from the next wave

REENST LESEMANN

CEO

rlesemann@columbiapwr.com

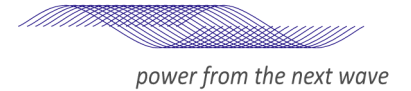
MISSION



To help satisfy the growing, global demand for reliable, consistent renewable energy, we are commercializing a cost-effective wave power system.



COMPANY OVERVIEW



History

- ▶ started in 2005
- ▶ technology started at Oregon State University
- ▶ 11 employees
- ▶ US Offices
 - ▶ Product Development - Corvallis, OR
 - ▶ Admin - Charlottesville, VA
- ▶ international design and manufacturing supply chain

Federal Partners

- ▶ US Department of Energy
- ▶ US Department of Navy

Product Line

- ▶ “RAY” Series – scalable system (<1kw to Megawatt scale)
- ▶ proprietary design; 3 patents issued



GREENLIGHT ENERGY RESOURCES



GREENLIGHT
ENERGY RESOURCES



Acquired by BP



Acquired by SunEdison



BP has built over \$2 billion of wind facilities on Greenlight projects since the acquisition.



SunEdison has financed or started construction on \$320 million of Axio projects since the acquisition.

Maximum build-out of current portfolio is \$12 billion.

Utility and tactical scale markets represent multi-billion annual market

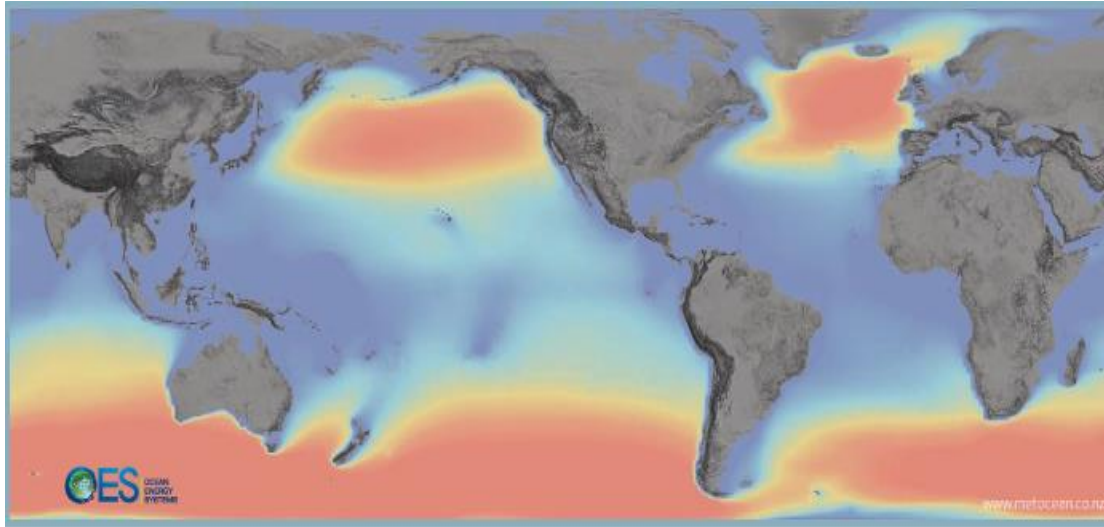
WHY WAVE ENERGY?



the ocean is a desirable energy resource

- ▶ energetic
- ▶ consistent
- ▶ predictable
- ▶ supply tends to be close to the demand
- ▶ seasonality tends to be demand matched

GLOBAL RESOURCE WITH REGIONAL OPPORTUNITY



potential for SE Alaska to leverage its position and natural resource

- ▶ “bridge” opportunity
- ▶ help with federal push to utility-scale technology
- ▶ economic development
- ▶ smaller loads
- ▶ ability to improve local COE

BUT A TOUGH PLACE TO OPERATE



Survivability
+
Cost Viability
+
Low Impact

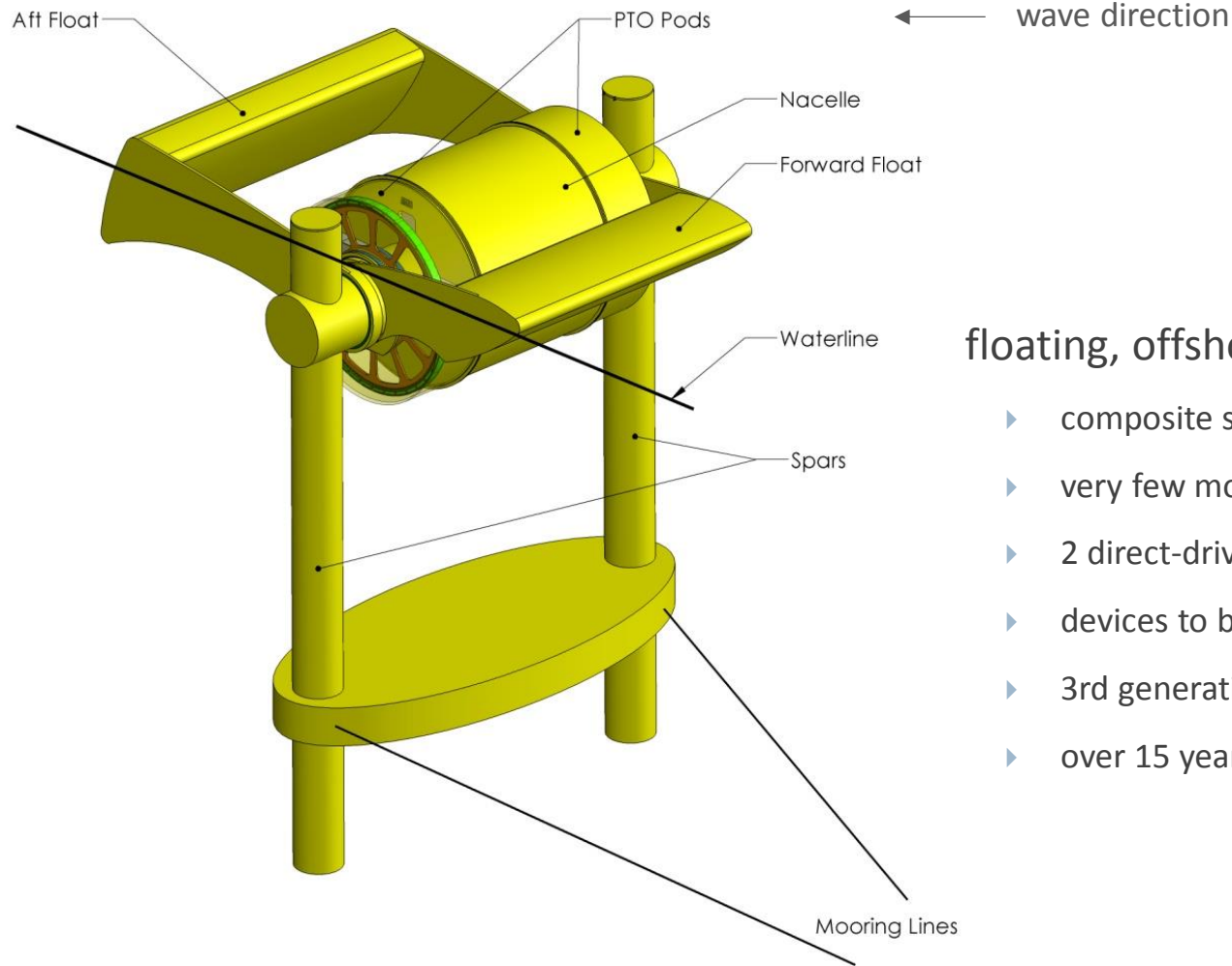
*this includes some obvious assumptions about customers, markets, national policy...

OUR FOCUS



- ▶ simple is better
- ▶ offshore where the energy is greatest with the lowest impact
- ▶ low cut-in/no cut-out
- ▶ on-station maintenance
- ▶ no specialized equipment
- ▶ end of life recovery only

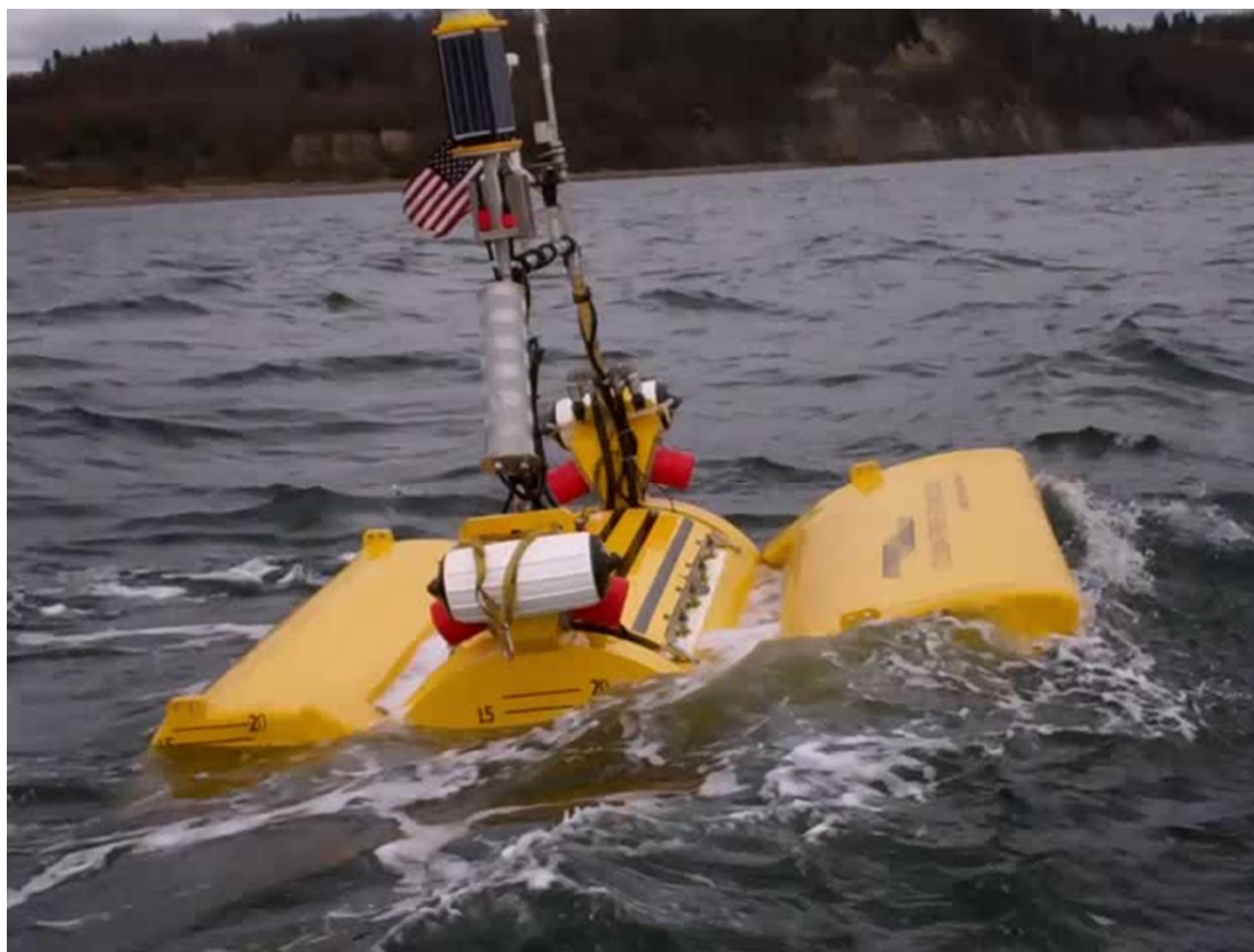
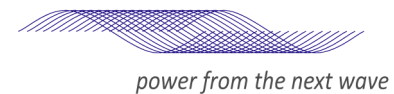
STINGRAY



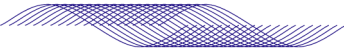
floating, offshore, mega-watt scale device

- ▶ composite structure
- ▶ very few moving parts
- ▶ 2 direct-drive permanent magnet generators
- ▶ devices to be arrayed in arrays
- ▶ 3rd generation design
- ▶ over 15 years of academic and corporate R&D

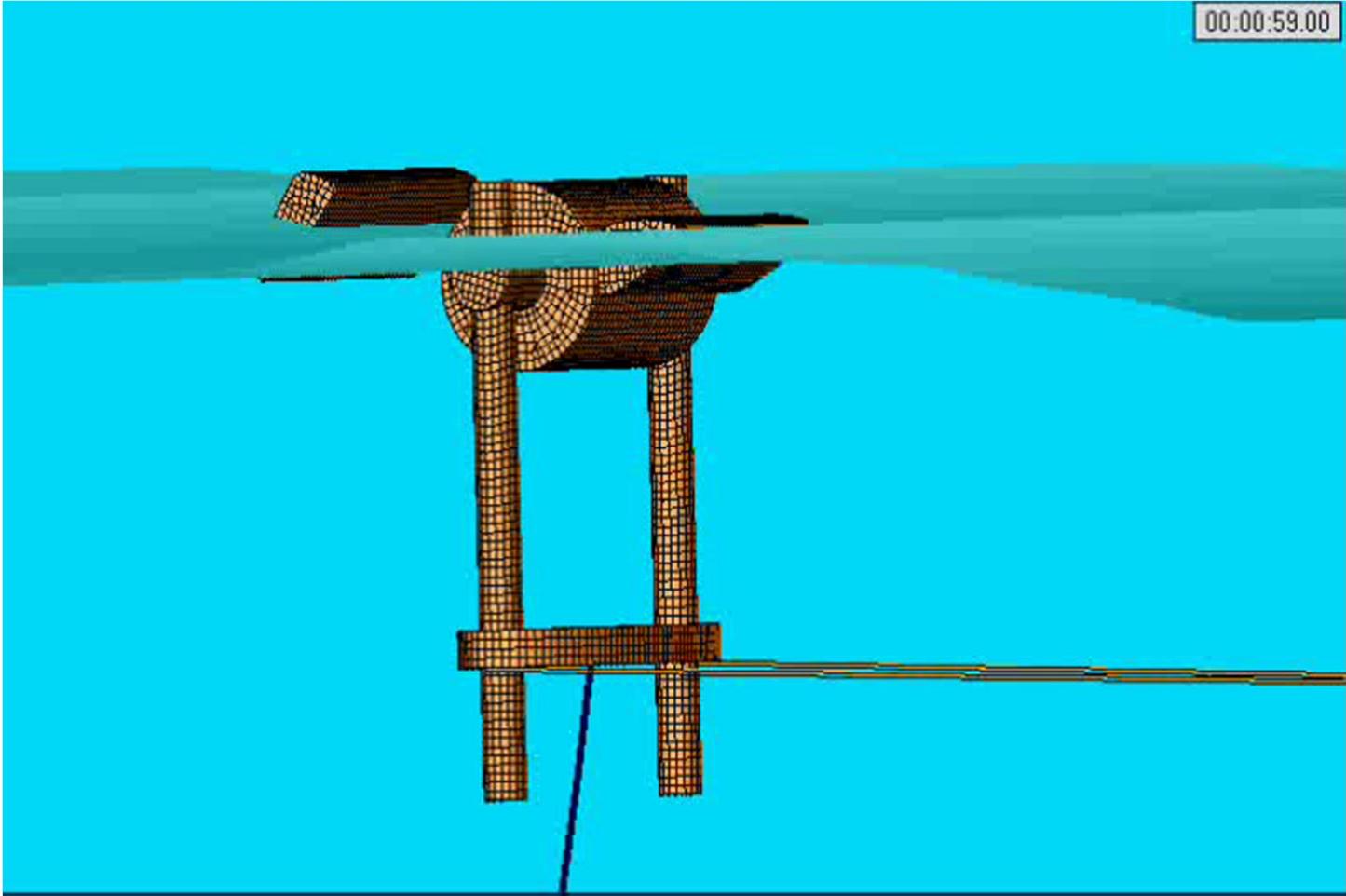
SEARAY SEA TRIALS



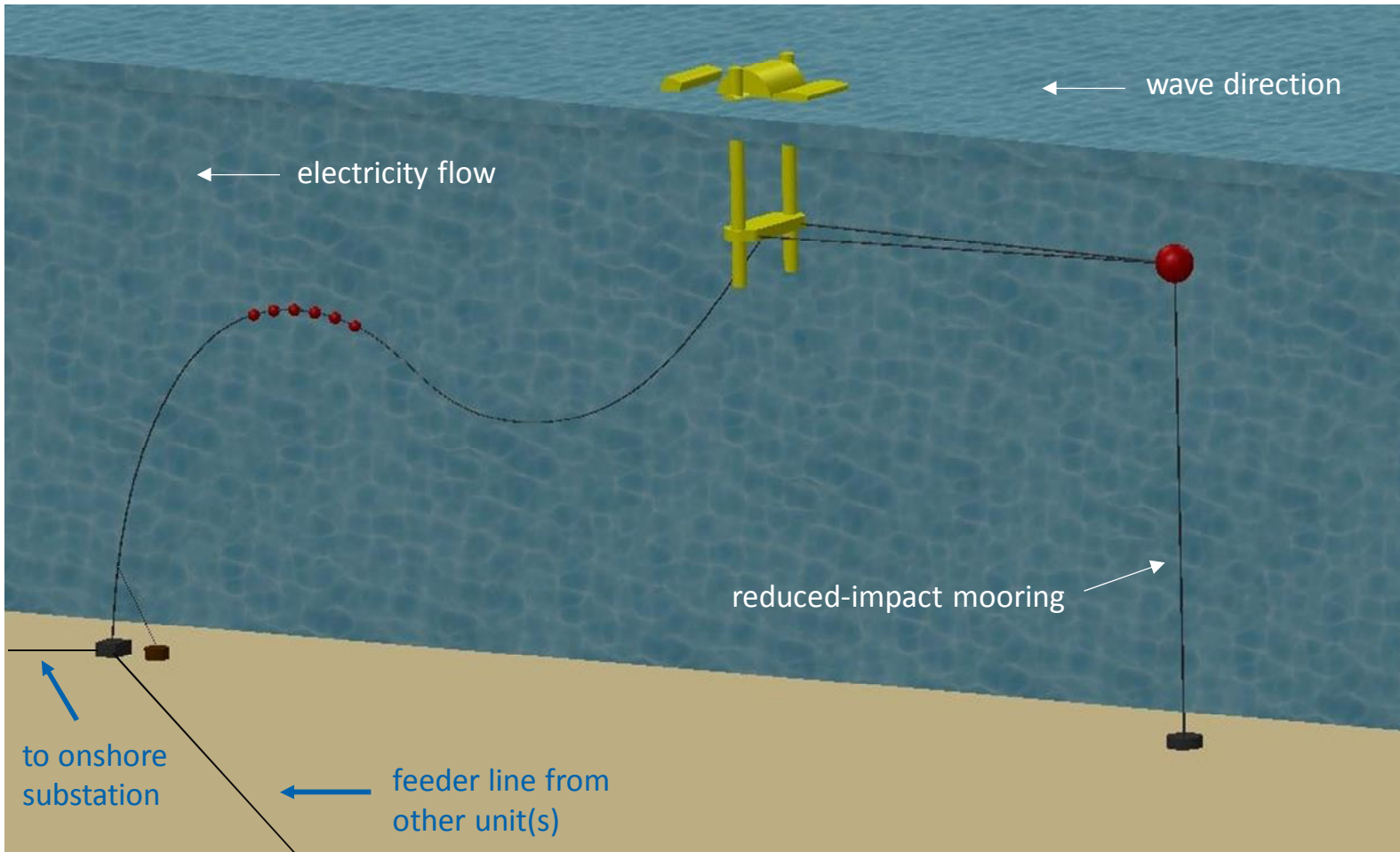
STINGRAY



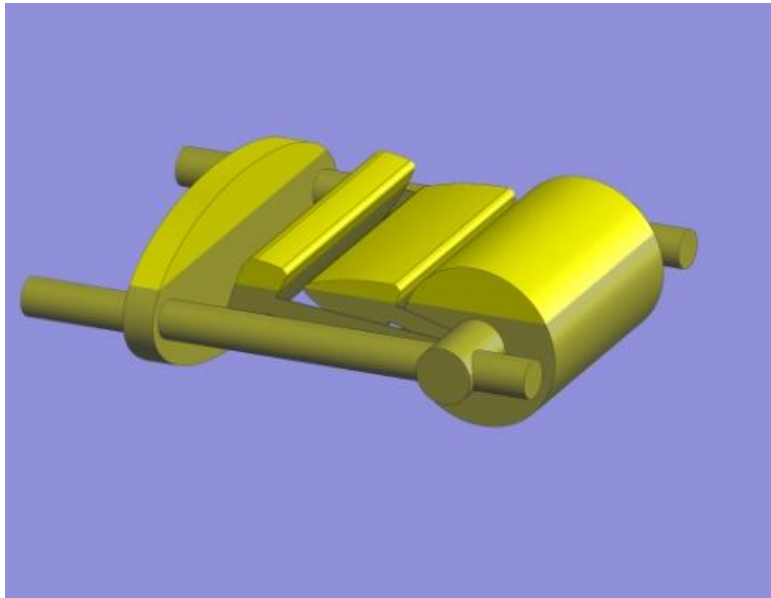
power from the next wave



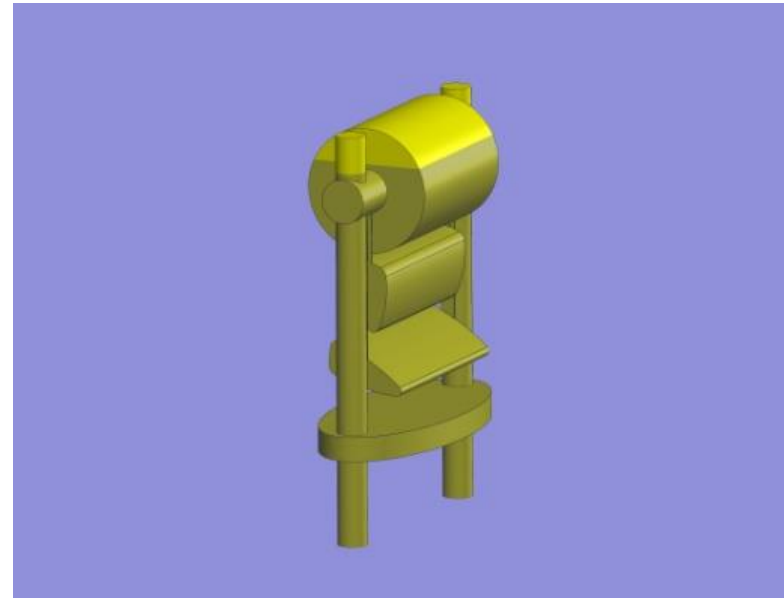
STINGRAY



Transport Mode




Extreme Survival Mode




WAVE ENERGY COMPETITION

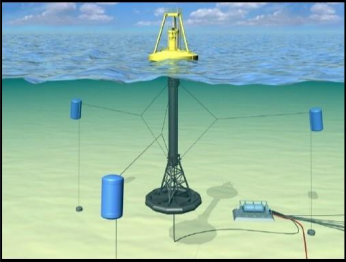




Pelamis Wave Power

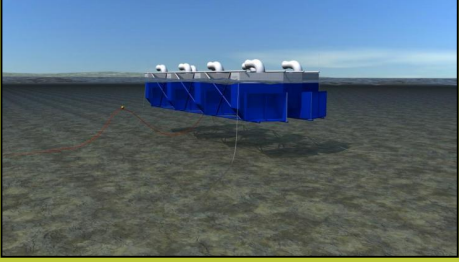


AWS Ocean Energy




Ocean Power Technology


OFFSHORE LOCATION



Oceanlinx



Aquamarine



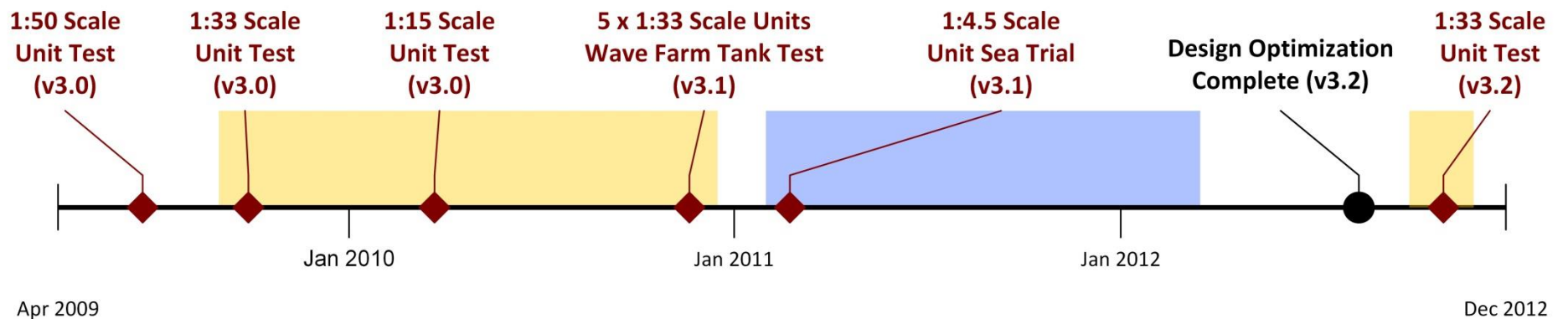
Carnegie

NEARSHORE

<u>Competitive Difference</u>	<u>StingRAY</u>	<u>Competitors</u>	<u>Unique Advantage</u>
Energy Capture	Heave & Surge	Heave or Surge Only*	2x Potential Energy Capture
Generator	Direct-Drive, Perm. Mag.	Hydraulics, Air Turbines	Higher Efficiency, No Heavy Sea Shutdown
Structure	Fiberglass	Steel	Lower Cost Manufacturing and Operations

*Pelamis claims heave and sway

TESTING MILESTONES



For sake of presentation, project milestones show starting point only

<u>Test Location</u>
OSU – Test Facilities
Puget Sound, USA

MARKET PATH



THANK YOU



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