

Optimized Wave Energy Harvester for Distributed Application

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15 Oct 2012



This presentation focuses on the application of a novel technology to the harvesting of ocean wave energy



The benefit of energy harvesting



Genesis of the OceanGen™ concept



Prototype development

Ocean wave energy can be an alternative and valuable source of power for remote oceanographic buoys

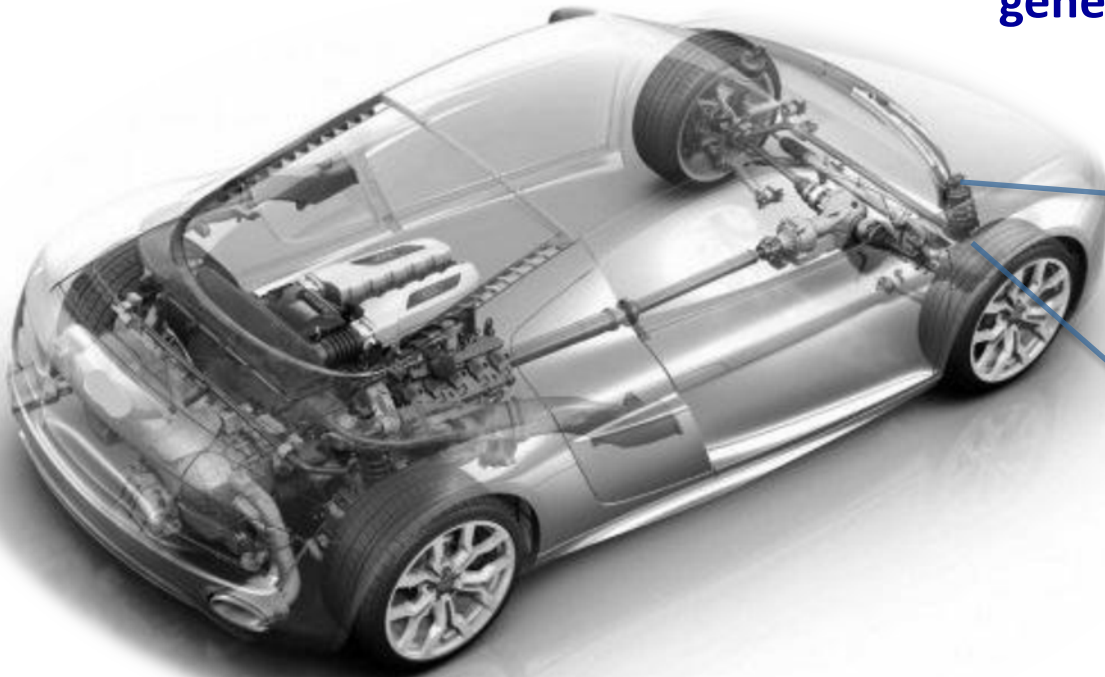
Buoy tender



Maintenance on an oceanographic buoy

Levant Power GenShock® technology translates vehicle suspension movement into energy

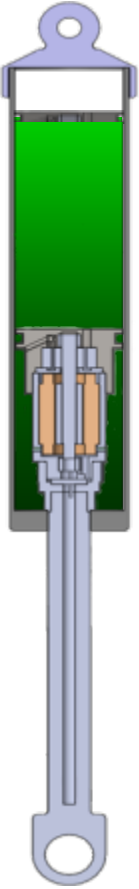
Improves ride / handling while generating electricity



Levant
power

Levant Power GenShock[®] technology can be applied to the ocean environment to create the OceanGen[™] concept

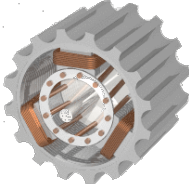
Linear Motion



Efficiently converted to Rotary Motion



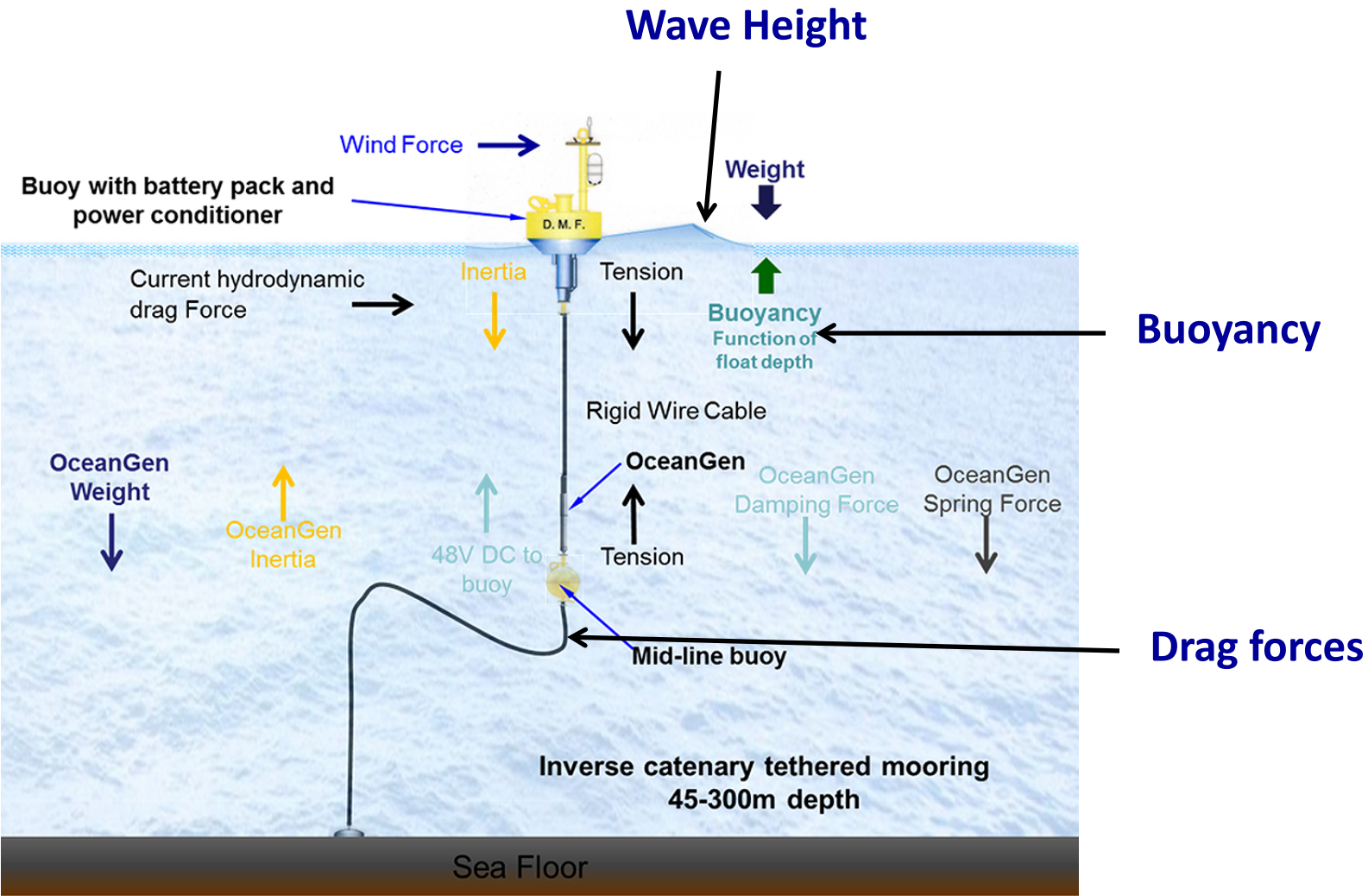
Spinning a generator to produce electricity



Enabling power conversion and sophisticated control



Converting wave energy into a source of power for remote oceanographic buoys



OceanGen™ was hardened for the ocean environment

Optimized gas charge for return force.

Self-contained power electronics.

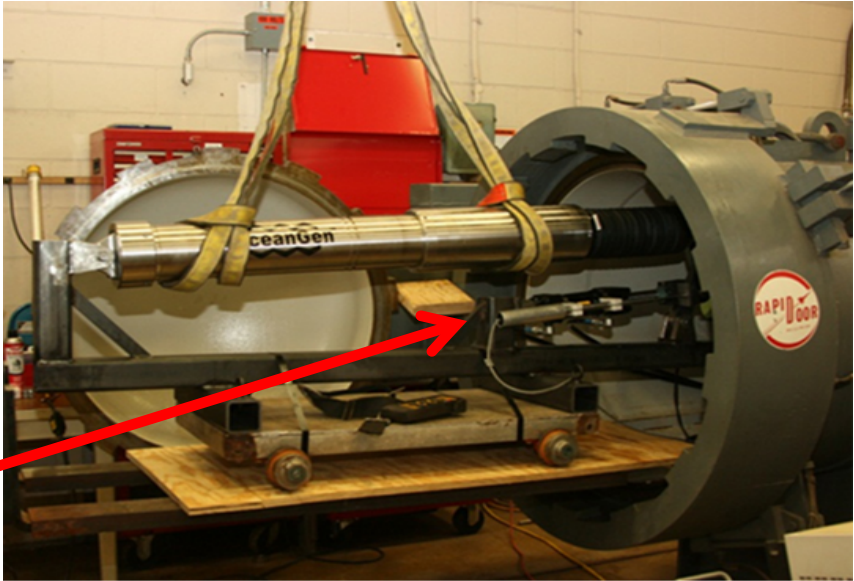
Compliant bellows enable fully-sealed system.

High-strength, corrosion resistant design for long-life mooring applications.

Integrated hydraulic Piston Head (IPH) for power generation.



OceanGen™ prototype testing

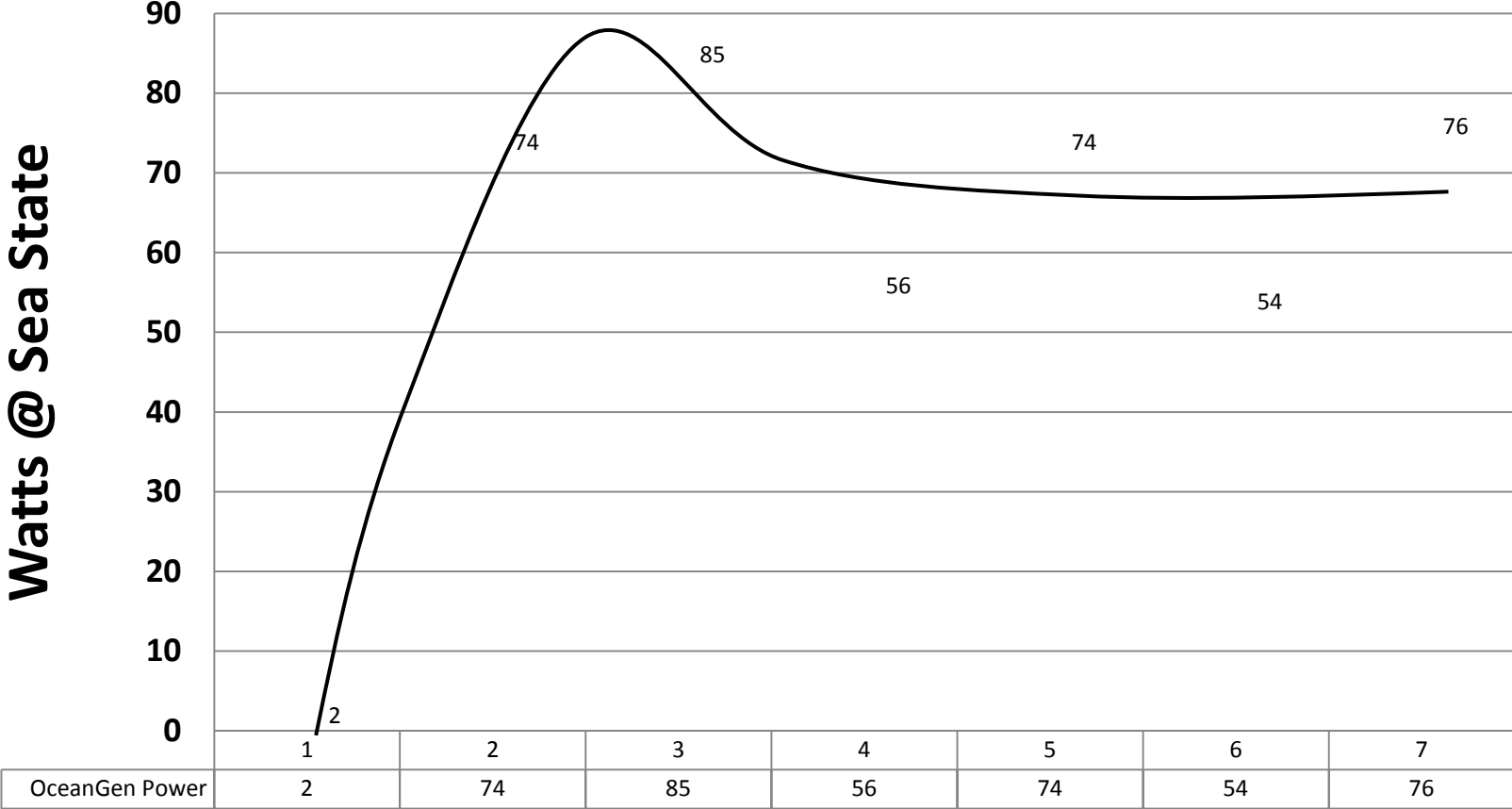


Hydraulic system to simulate sea states.



Prototype testing has validated modeling and simulation predictions of performance

OceanGen Power



In summary, Battelle has developed OceanGen™ to effectively harvesting wave energy for buoy systems

Wave energy can be a beneficial source of power for oceanographic buoys

Technology from Levant Power's GenShock® has been leveraged for this application

Prototype testing has validated predictions

