

Wave Energy as power supply to offshore autonomous systems

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Abstract

Among the advantages that wave energy as a resource has over wind and solar is the relative continuity of available power. This presents an opportunity for the use of wave energy conversion to serve a superior rate of annual load hours for instrumentation, communication, or other systems located offshore. Serving the desired rate of uptime for such systems is an engineering and economic exercise to select the proper level of installed power production over-capacity and onboard energy storage, tailored to the available wave resource. Power supply to autonomous offshore systems from wave energy presents a commercially viable application of wave energy technology today, while commercial viability of grid-connected wave energy may lag considerably. The presentation will include a summary of the recent Fred. Olsen BOLT Lifesaver deployment at the Navy's Hawaii Wave Energy Test Site (WETS), and a brief discussion of near-term plans for a second deployment. Time permitting, researchers from the University of Washington's Applied Physics Laboratory (James Joslin, Ph.D., and Paul Gibbs) will briefly discuss plans to integrate a suite of ocean sensors into the Lifesaver as part of a follow-on deployment at WETS.