NPS Defense Energy Program Presents:

DEFENSE ENERGY SEMINAR SERIES

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Energy Ships, Mobile Fuel & Power Plants for Energy Security

Tuesday, November 15, 2022 | 12:00 PM Pacific Time | MAE Auditorium, Bldg #255

Vincent S. Neary, PhD, P.E., F.ASCE

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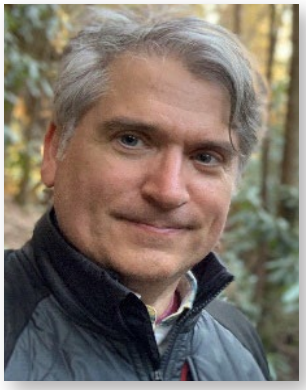

Vincent S. Neary

Abstract

Previous modeling studies indicate Energy Ships (E-Ships) may be the most promising renewable power generation technology to meet global energy demands and energy security goals. As autonomous wind-powered sailing ships equipped with hydrokinetic turbines and moving at speeds up to 15 m/s, E-Ships can significantly increase power generation output compared to stationary turbines that only harvest resources up to 3 or 4 m/s. The turbines power manufacturing of synthetic fuels, like green hydrogen, but also can recharge batteries. As mobile platforms at sea, they avoid land use constraints and conflicts resulting in extensive delays due to permitting and legal challenges, as well as significant capital and O&M costs for the supporting infrastructure of stationary renewable power generators, e.g., electrical cables, substations. Dr. Vincent Neary, marine energy technologies lead for Sandia will present E-Ship commercialization discovery and advancement efforts by Sandia and E-Ship collaborators, including Dr. Sarigul-Klijn, Professor Aerospace Engineering Department, UC Davis, and Dr. Platzer, co-founder of Green Energy Ship LLC and Distinguished Professor (retired) from the Naval Postgraduate School.

Biography

Vincent Neary has spent the last fifteen years working on a wide-range of topics advancing marine renewable energy, including modeling and measuring tidal and wave environments for resource characterization and assessment, experimental testing and numerical modeling of marine energy conversion technologies, and developing open-source reference technologies, like Sandia's MHKF1 reference marine turbine, to benchmark techno-economic performance. His recent work is focused on tidal and wave energy resource characterization and classification to support regional energy planning, project development and type-certification. Vincent is a professional engineer and a Fellow of the American Society of Civil Engineers (ASCE) recognized for the breadth of his contributions to research, teaching, and practice in fluid mechanics and hydraulic engineering. He serves as a subject matter expert developing industry standards as a member of the International Electrotechnical Commission (IEC), Task Committee 114, Advisory Group 2.

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