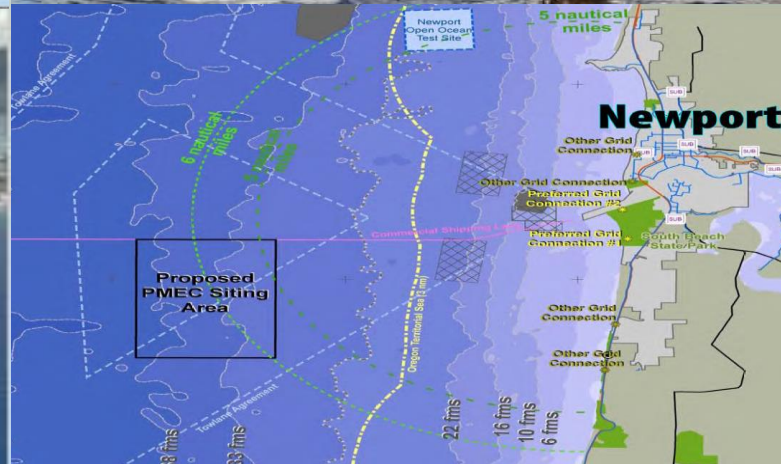
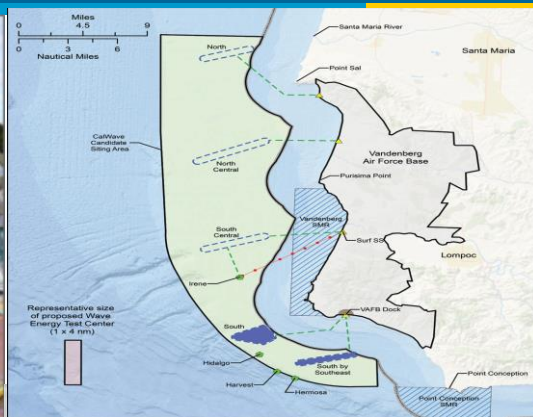


Water Power Technologies Office (WPTO) Marine and Hydrokinetic

U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy



Testing Infrastructure and Instrumentation Overview

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16 FEB 2017

Testing Infrastructure and Instrumentation Session Overview

- **Challenge addressed by this portfolio:**
 - Transition US industry from laboratory R&D to open ocean R&D to accelerate commercialization
- **Improvement Opportunities:**
 - US permitting processes
 - Open ocean instrumentation
 - Wave energy array optimization
 - Growth of US MHK workforce
 - Growth of US MHK supply chains

Program Strategic Priorities

Technology Maturity

- **Test and demonstrate prototypes**
- Develop cost effective approaches for installation, grid integration, operations and maintenance
- Conduct R&D for Innovative MHK systems & components
- Develop tools to optimize device and array performance and reliability
- Develop and apply quantitative metrics to advance MHK technologies

Deployment Barriers

- **Identify potential improvements to regulatory processes and requirements**
- **Support research focused on retiring or mitigating environmental risks and reducing costs**
- Build awareness of MHK technologies
- Ensure MHK interests are considered in coastal and marine planning processes
- Evaluate deployment infrastructure needs and possible approaches to bridge gaps

Market Development

- Support project demonstrations to reduce risk and build investor confidence
- Assess and communicate potential MHK market opportunities, including off-grid and non-electric
- Inform incentives and policy measures
- Develop, maintain and communicate our national strategy
- **Support development of standards**
- Expand MHK technical and research community

Crosscutting Approaches

- **Enable access to testing facilities that help accelerate the pace of technology development**
- Improve resource characterization to optimize technologies, reduce deployment risks and identify promising markets
- Exchange of data information and expertise

Feedback from 2014 Peer review

- **General positive comments**
 - Leveraging wind experience at national labs
 - Continue international leadership and collaboration
- **Constructive Criticism**
 - Labs focus more on industry needs
 - Instrumentation workshop now includes more industry participation to help ensure labs build instrumentation based on industry needs
 - Develop life cycle cost estimate for the open ocean test facility before proceeding with construction
 - Accomplished by NNMRC and CALWAVE prior to construction award

Timeline

