

***Conference Paper SNMREC/CP-11-167***

June, 2011

## **SNMREC Test Capabilities**

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**EnergyOcean International, 2011  
Portland, ME**

# SNMREC Test Capabilities

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**EnergyOcean 2011: June 15, 2011**



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**SOUTHEAST NATIONAL MARINE  
RENEWABLE ENERGY CENTER**

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# Outline

- SNMREC Overview
- Scaling and Testing
- Test Center Value
- Description of Test Capabilities
- Value-added SNMREC Capabilities

# SNMREC Overview

Center established in 2007 as a state of Florida Center of Excellence and designated as an US Department of Energy National Marine Renewable Energy Center in 2010.

Focus areas are for open-ocean current and ocean thermal energy conversion (OTEC):

1. Technology Testing
2. Resource Characterization and Measurement
3. Environmental Assessment
4. Technology Research, Development, and Support
5. Regulatory Assistance
6. Stakeholder Outreach
7. Education and Workforce Development

# Scaling and Testing

## Validation vs. Verification

**“built the right thing” vs. “built the thing right”**

### Associated Activities:

1. Analysis
2. Demonstration
3. Test
  - A. **Development:** New item proof of concept or feasibility
  - B. **Qualification:** System design meets requirements above expected operating conditions
  - C. **Acceptance:** Prior to transition to commercial deployment
  - D. **Operational:** Verify item meets spec requirements in actual operational environment
4. Certification

ISO/IEC 15288:2008

# Test Center Value

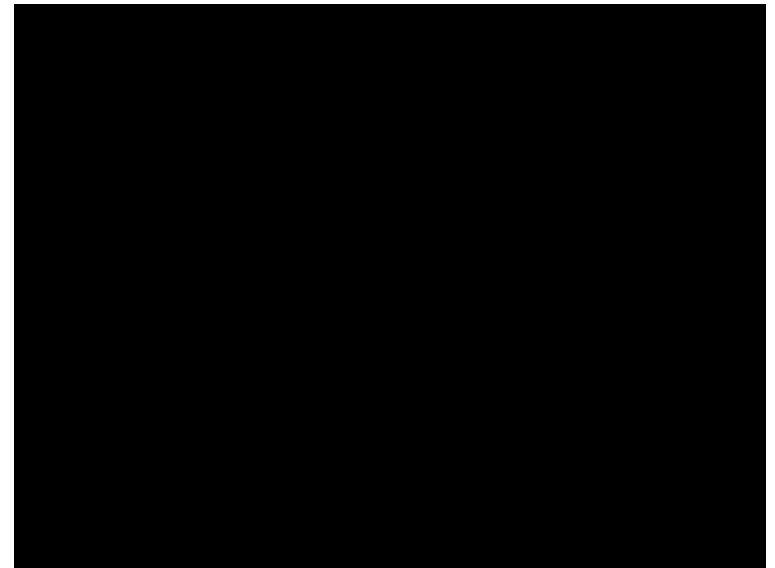
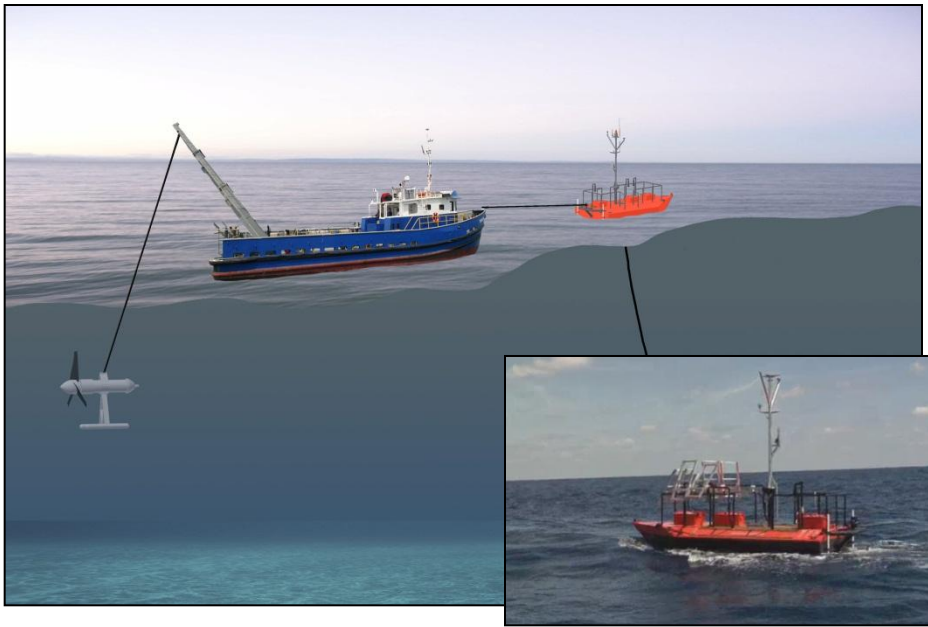
## Leverage Public Funds to:

- Reduce cost, development, regulatory burden for verification and validation testing
- Reduce risk
- Opportunity for developers to focus effort and funds on critical technology development
- Provide 3<sup>rd</sup>-party certification and assessment

# Test Capabilities

## Small-scale Offshore Test Berth

Surface-deploy systems with rotors as large as 3.5m radius or 100kW peak power production.



- BOEMRE Interim Policy lease in process.
- 5/23/2011 Announcement of EA development at BOEMRE for IP lease.
- Future 238 Research Lease under consideration and review.

# Test Capabilities

## Onshore Capabilities

25kW Peak Power Rotary Dynamometer



- Full closed-loop and grid operation
- Integrated micro dynamometer (3hp)
- Fully controllable drive and generator

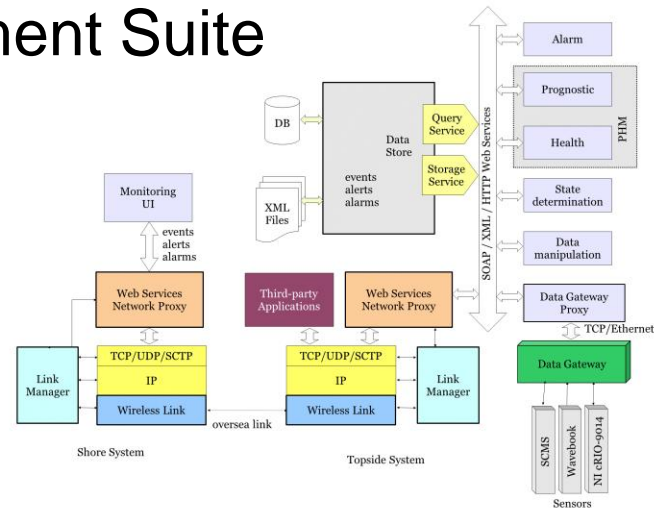
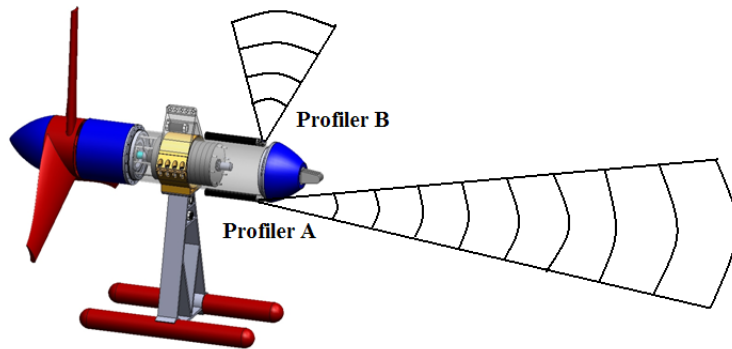


# Other SNMREC Value

## MORE THAN JUST TESTING

### Research and Development:

- Intelligent Monitoring and SCADA Systems
- Device Performance Measurement Suite
- Turbulence Characterization





**Thank you**

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