

## Data Sharing & Analysis

**Marine and Hydrokinetics Program**

Thursday, October 10, 2019

**Hoyt Battey, Program Manager**

Water Power Technologies Office

## Marine and Hydrokinetics (MHK) Program Strategic Approaches

### Data Sharing and Analysis

Foundational  
and  
Crosscutting  
R&D

Technology-  
Specific  
Design and  
Validation

Reducing  
Barriers to  
Testing

## Data Sharing and Analysis

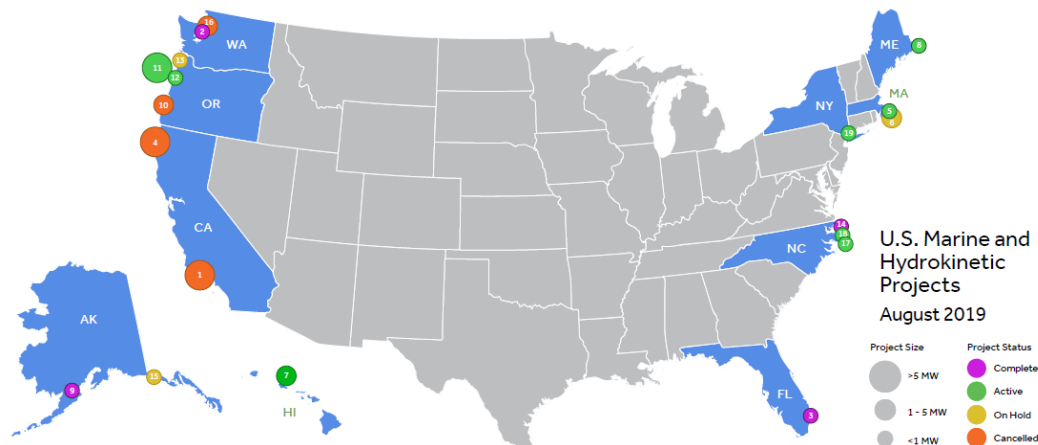
- Provide original research to assess and communicate potential MHK market opportunities, including those relevant for other maritime markets
- Aggregate and analyze data on MHK performance and technology advances, and maintain information sharing platforms to enable dissemination
- Support the early incorporation of manufacturing considerations/information into design processes
- Leverage expertise, technology, data, methods, and lessons from the international MHK community and other offshore scientific and industrial sectors

Knowledge  
Collection  
and Curation

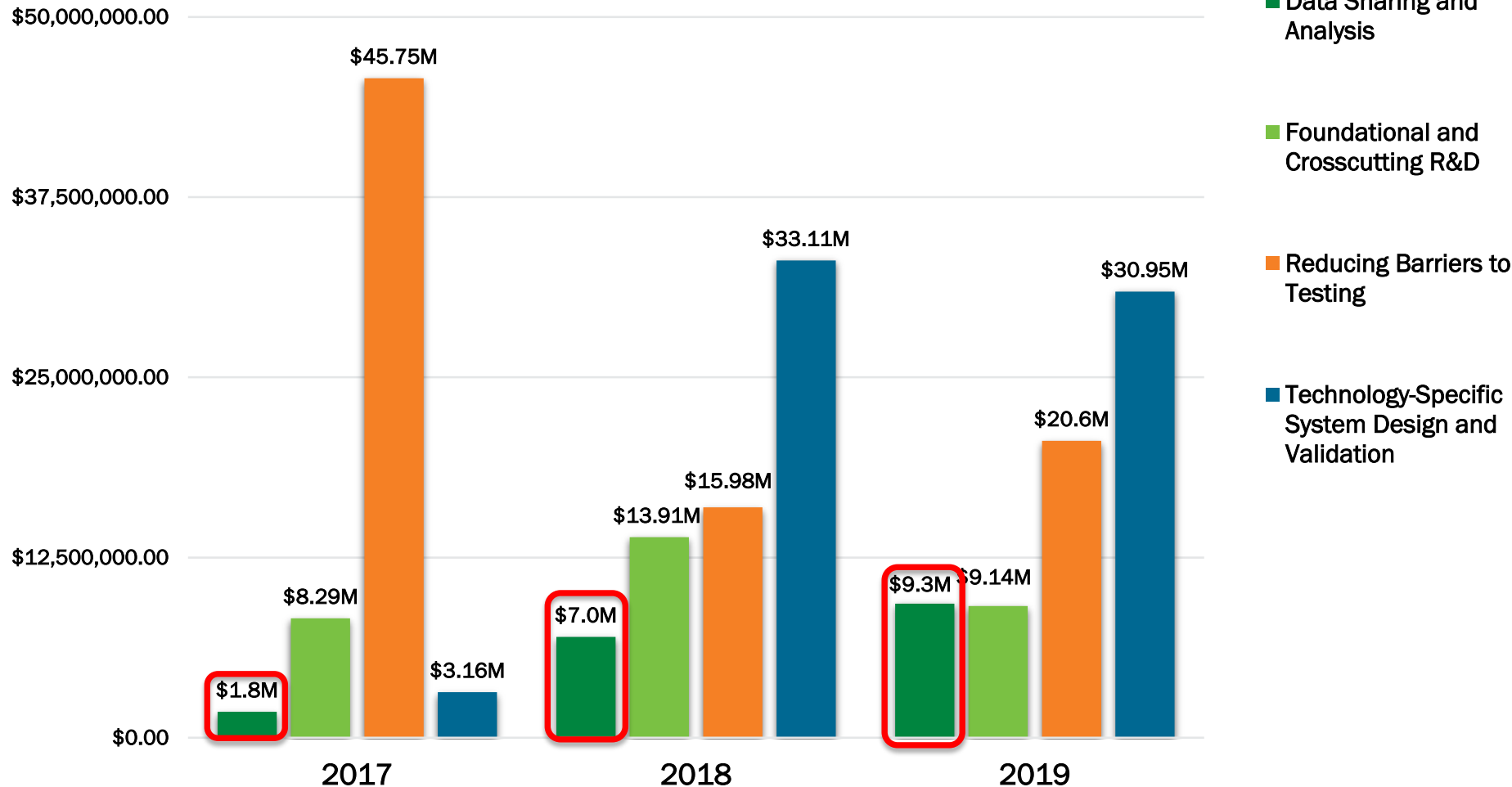


Data and  
Information  
Synthesis

Information  
Dissemination  
& Engagement



## FY17-FY19 MHK Program Budget by Activity



- *2010 – Present Tethys & OES Environmental (Formerly Annex IV)* – Aggregates and makes accessible global information on environmental concerns surrounding MHK
- *2010 MHK Permitting Handbook*
- *2014-2016 Regulator Workshops* – Opportunity for regulators to learn more about the most recent science regarding environmental concerns and discuss appropriate monitoring requirements
- *2016- Present Environmental Compliance Cost Analysis* – examine costs for permitting and environmental monitoring of MHK projects and identify potential cost reduction strategies
- *2017-Present MHK Permitting Handbook Update*
- *2018-Present Combination of multiple WPTO databases and portals into the PRIMRE repository*
- *2018 – MHK Data Dissemination FOA – “Improving the Efficiency and Effectiveness for MHK Permitting: A Toolkit and Engagement for Success”*

# Stakeholder Engagement, Outreach, and Dissemination

U.S. DEPARTMENT OF  
**ENERGY**

Energy Efficiency &  
Renewable Energy

## PRIMRE

The Portal and Repository for Information on Marine Renewable Energy

MRE Basics

Databases

Knowledge Hubs

<https://openei.org/wiki/PRIMRE>



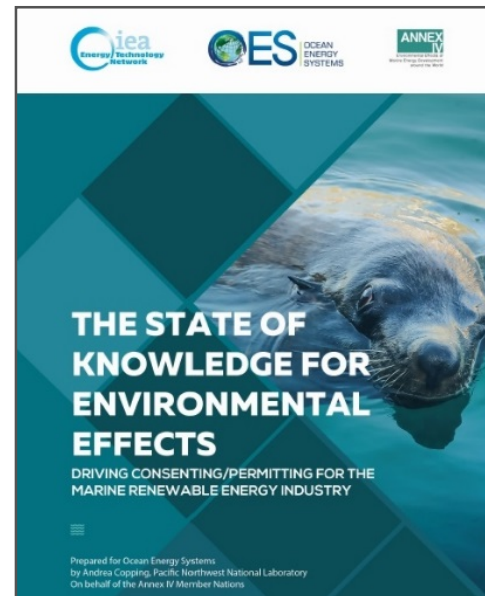
<https://tethys.pnnl.gov/>

## ANNEX IV 2016 State of the Science Report

ENVIRONMENTAL EFFECTS OF  
MARINE RENEWABLE ENERGY DEVELOPMENT  
AROUND THE WORLD

## 2016 State of the Science report

<https://tethys.pnnl.gov/publications/state-of-the-science-2016>




**Ocean Energy  
Systems (OES)  
position paper**  
<https://tethys.pnnl.gov/publications/state-knowledge-environmental-effects-driving-consenting-permitting-marine-renewable>





# Program Portfolio


## Thursday, October 10 MHK Track 2 | Reducing Barriers to Testing and Data Sharing

Start	End	Agenda Session	Presenter	Affiliation	Track	Room
8:15 AM	8:45 AM	Check-in, Breakfast				
8:45 AM	9:05 AM	Overview of Data Sharing & Analysis and Introduction of Lab Projects	Hoyt Battey	WPTO	Testing & Data	Grand Ballroom C
9:05 AM	9:35 AM	Tidal Resource Gaps Analysis	Kevin Haas (on behalf of NREL)	NREL	Testing & Data	Grand Ballroom C
9:35 AM	10:05 AM	Model Validation and Site Characterization for Early Deployment MHK Sites and Establishment of Wave Classification Scheme	Levi Kilcher	NREL, PNNL, SNL	Testing & Data	Grand Ballroom C
10:05 AM	10:35 AM	International Environmental Data Sharing Initiative (OES-Environmental & Tethys Database)	Andrea Copping	PNNL	Testing & Data	Grand Ballroom C
10:35 AM	10:45 AM	Coffee Break				
10:45 AM	11:15 AM	Marine and Hydrokinetic Data Repository (MHKDR)	Jon Weers	NREL	Testing & Data	Grand Ballroom C
11:15 AM	11:45 AM	MHK Data Products and User Community Development	Kelley Ruehl	SNL, NREL, PNNL	Testing & Data	Grand Ballroom C
11:45 AM	12:05 PM	End-of-Session Networking Activity	All recent presenters	All recent presenters	Testing & Data	Grand Ballroom C
12:05 PM	12:25 PM	Closing Remarks on Testing & Data	Steve DeWitt	WPTO	Testing & Data	Grand Ballroom C
12:25 PM	1:15 PM	Lunch				

 Information Data Apps




PRIMRE MRE Basics Databases Knowledge Hubs MRE Organizations STEM




# PRIMRE

The Portal and Repository for Information on Marine Renewable Energy

MRE Basics Databases Knowledge Hubs


**POWERING**  
the BLUE ECONOMY  
**Marine Energy Collegiate Competition**  
U.S. DEPARTMENT OF ENERGY



### Marine & Hydrokinetic Technology Database

Lists MHK industry, technology being developed, and illustrates project deployments around the world. Crowd sourced - update the database with your information today!


Explore >



### Hydrodynamic Testing Facilities Database

Provides data on a range of test capabilities within the United States Database funded by Department of Energy.


Explore >



### Tethys

Tethys facilitates the exchange of information and data on the environmental effects of wind and marine renewable energy technologies and serves as a commons for wind and marine renewable energy practitioners and therefore enhance the connectedness of the renewable energy community.


View Tethys



### MHK Data Repository

The Marine Hydrokinetic Data Repository (MHKDR) is the repository for all data collected using funds from the Water Power Technologies Office of the U.S. Department of Energy (DOE).


View MHKDR



### MHK Instrumentation & Sensor Database

The ISDB shares information on MHK instrumentation and lessons learned from laboratory testing and field deployments to help the emerging MHK community achieve greater success in technology development.


View MHK ISDB



### Energy Resources

A list of useful Marine and Hydrokinetic resources and research collected by other departments, labs, and universities illustrating the uses and options of MHK technologies.

View Resources



### Marine Cadastre

A joint BOEM and NOAA initiative providing authoritative data to meet the needs of the offshore energy and marine planning communities.

View Database



- Updated MHK Permitting Handbook to be released soon
- OES-Environmental (Formerly Annex IV) State of the Science Report – public draft will be released at ICOE 2020
- Release of new Wave and Tidal resource information
- FY 18 FOA award “Improving the Efficiency and Effectiveness for MHK Permitting: A Toolkit and Engagement for Success” is getting started

## Improving the Efficiency and Effectiveness for MHK Permitting: A Toolkit and Engagement for Success

(New Award from FOA 1837) *PI: Kearns & West*

### Project Objectives

- Distill scientific knowledge into a Regulatory Assessment Framework and Status Reports for common environmental concerns
- Develop an online Toolkit that integrates relevant regulatory, scientific, and spatial MHK data to assist regulators in determining the studies and the monitoring needed for a specific site
- Conduct in-person meetings and webinars with regulators from federal and state agencies to share and gather input on the Toolkit, and to share experts' understanding of potential impacts for MHK projects.
- Pilot the Toolkit and lessons learned through a specific project permitting process or processes.

