

# Keys to Industry Advancement: Environmental Monitoring & Adaptive Management

Presented to:



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# ORPC Deployments & Technology Developments in 2014

RivGen®  
Power  
System



OCGen® Power System

How do these projects benefit the adaptive management process?



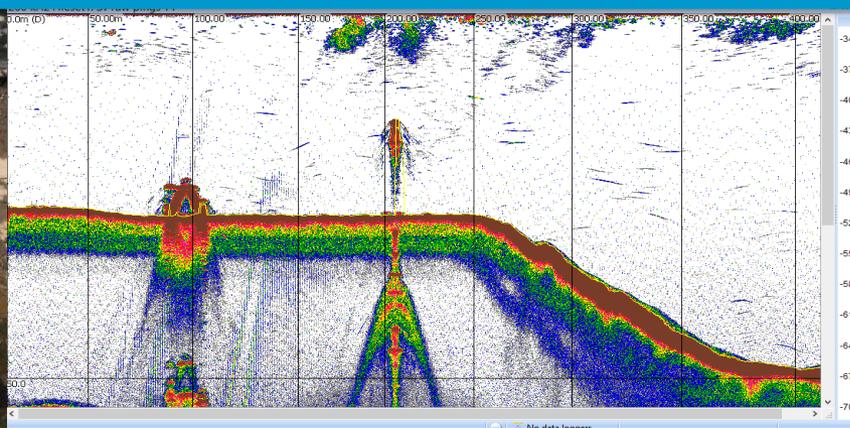
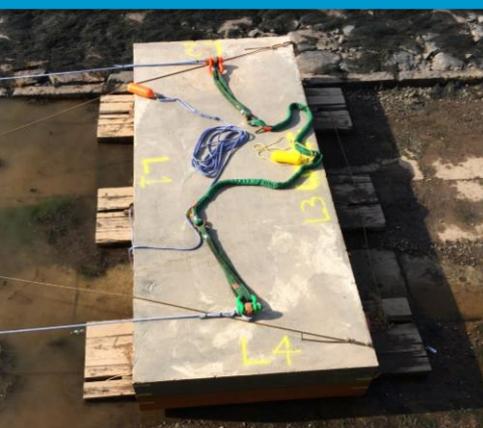
TidGen® 2.0 Power System Optimization

# TidGen® Technology Optimization Program

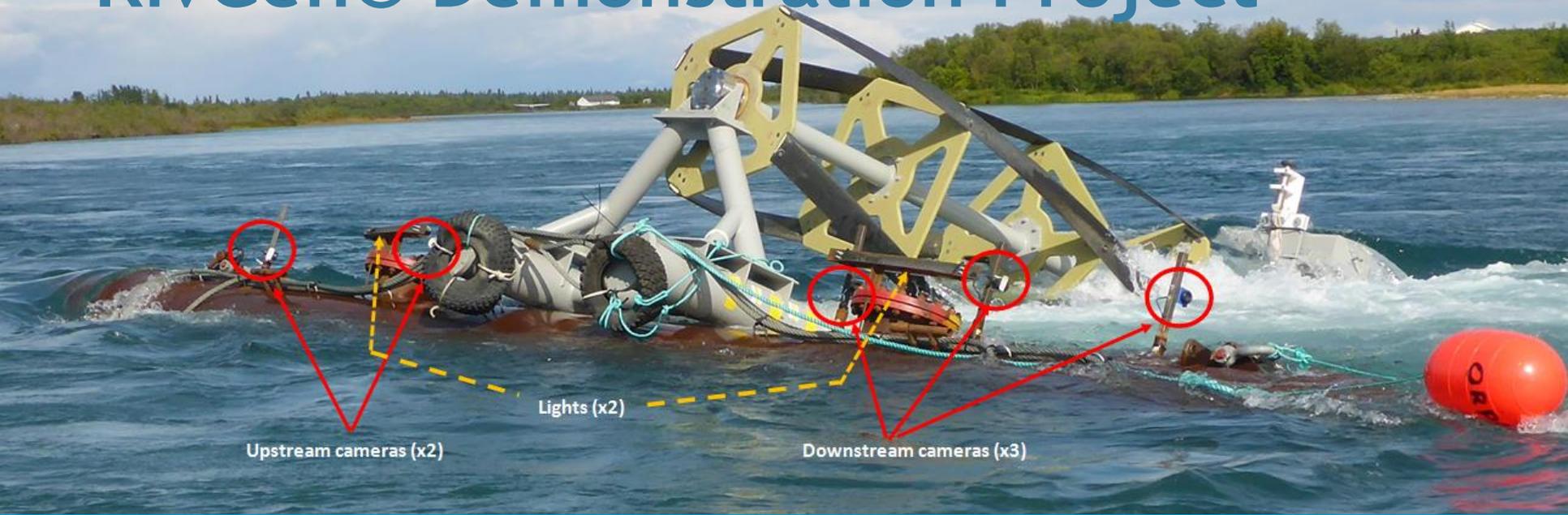
Funded by the U.S. Department of Energy and Maine Technology Institute, the objective of the program is to enhance efficiency and reliability, and decrease weight, production costs, and electricity cost of the system.



# OCGen® Module Mooring Project



# RivGen® Demonstration Project



# What do we know about project effects?

**Quantifiable environmental impacts are overwhelmingly positive**

- Carbon offset
- Negligible environmental effects observed to date
- No observed strikes of fish or marine mammals
- No indication of barrier effect
- Artificial reef development

**How do we maintain appropriate levels of monitoring proportional to the project risk?**



# The Role of Adaptive Management

Adaptive management is fundamental to ORPC's approach to minimize risk.

Key approaches include:

- Building and maintaining regulatory trust through:
  - Honesty and integrity
  - Understanding the demands on regulators
  - Informed, detailed project applications
  - Deliver on commitments
- Utilizing science-based data collection
  - Work with respected technical advisors
  - Develop innovative monitoring methodologies and technology
  - Inform team of pertinent power system interaction projects and global best available science
- Initiating adaptive approach in the pre-application phase and continue through project operation

# Demonstrated Actions

- Removal of restrictive dates for pile driving (April 2012)
- Review of 2012 and 2013 CBTEP Environmental Reports
- Accepted changes to monitoring modifications requested in 2012 Environmental Monitoring Report (May 2013)
- Temporary variance request granted for technology upgrade phase (October 2013)
- Concurrence with OCGen® testing within FERC licensed site (December 2013 - permit received within 3 months)
- October 2014 guidance related to permitting and licensing strategies



## ADAPTIVE MANAGEMENT TEAM

ORPC  
NOAA NMFS  
US F&W  
USCG  
USACE  
Maine DEP  
Maine DMR  
Technical Advisors

## Advancing the Industry

- Data collected from ORPC's project sites in Maine and Alaska, as well as the global knowledge base, will continue to inform the adaptive management process.
- Determining acceptable levels of monitoring that are proportional to the risk is key as more devices are installed.
- As risk is retired for single devices, focus should be concentrated on potential effects of commercial arrays



A horizontal splash of water with bubbles, rendered in shades of blue, spans across the top of the slide.

# Thank You!

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