

DOCKETED

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PacWave South

Testing Wave Energy for the Future



Oregon State University
Hatfield



PacWave

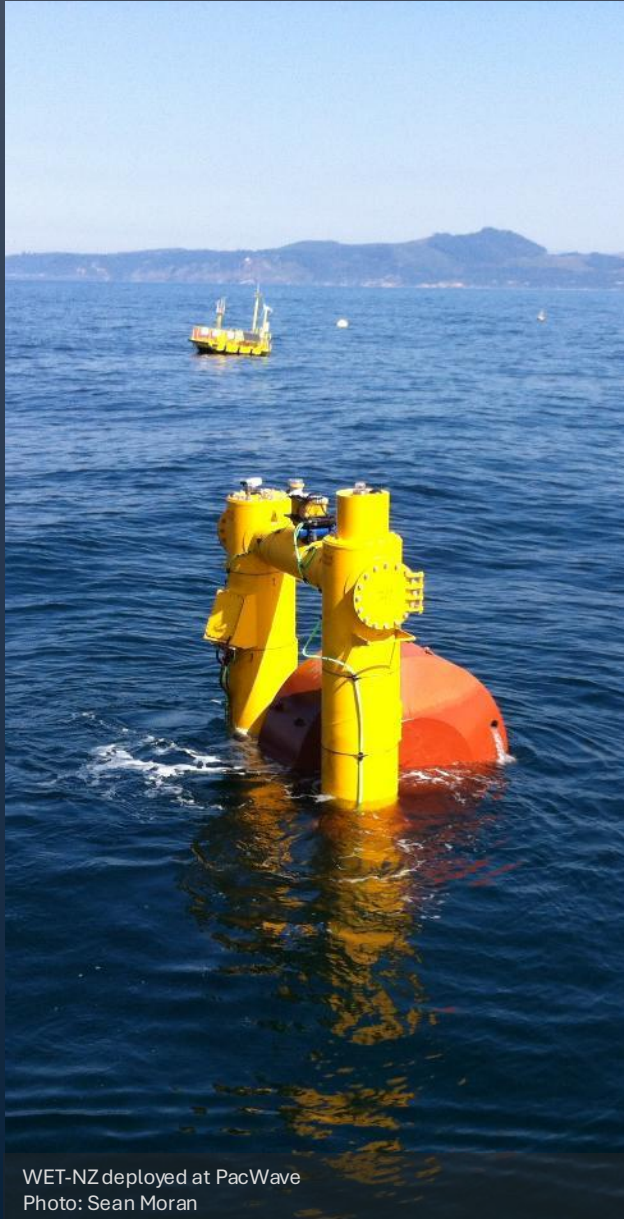
Justin Klure, Project Manager
PacWave

California Energy Commission (CEC)
SB 605 Wave & Tidal Energy Workshop

September 30, 2026



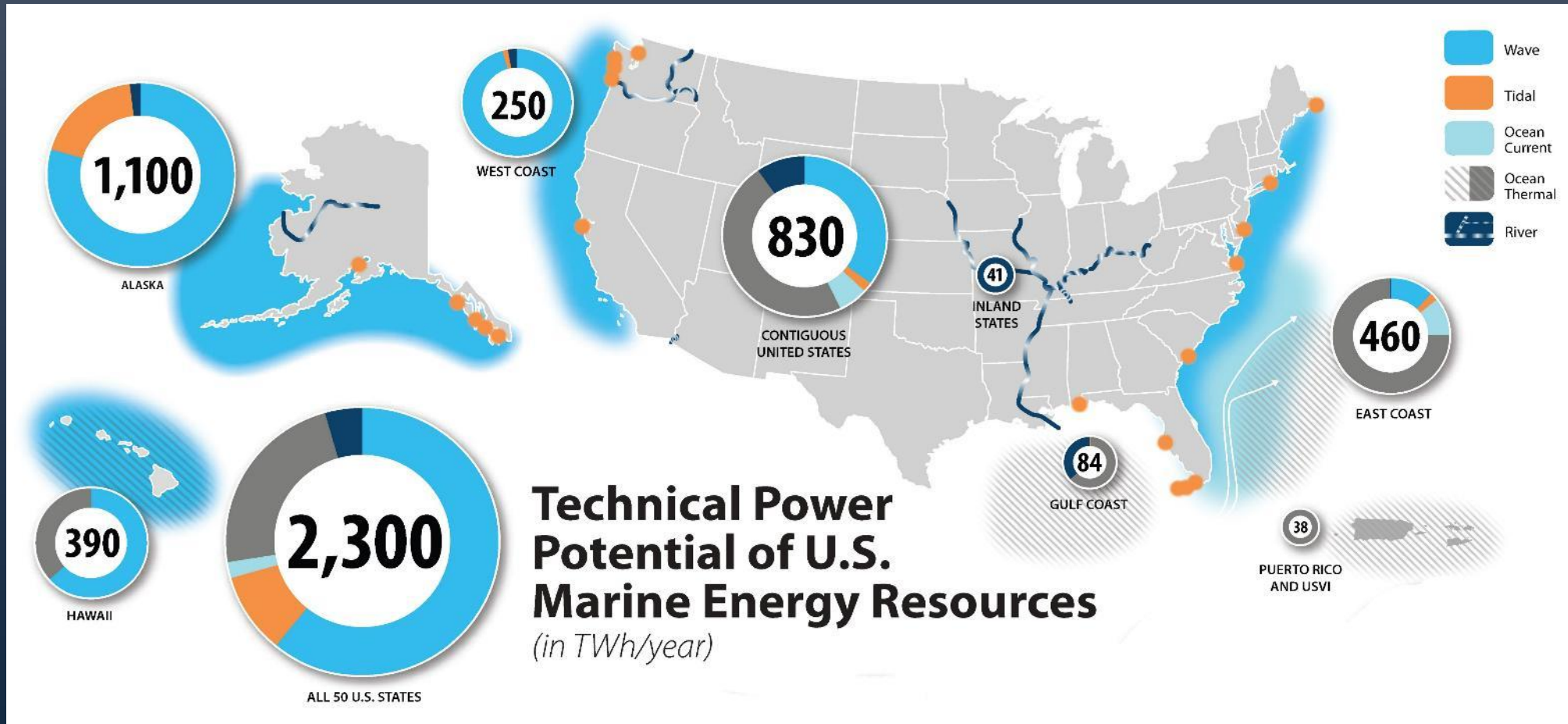
What is PacWave?



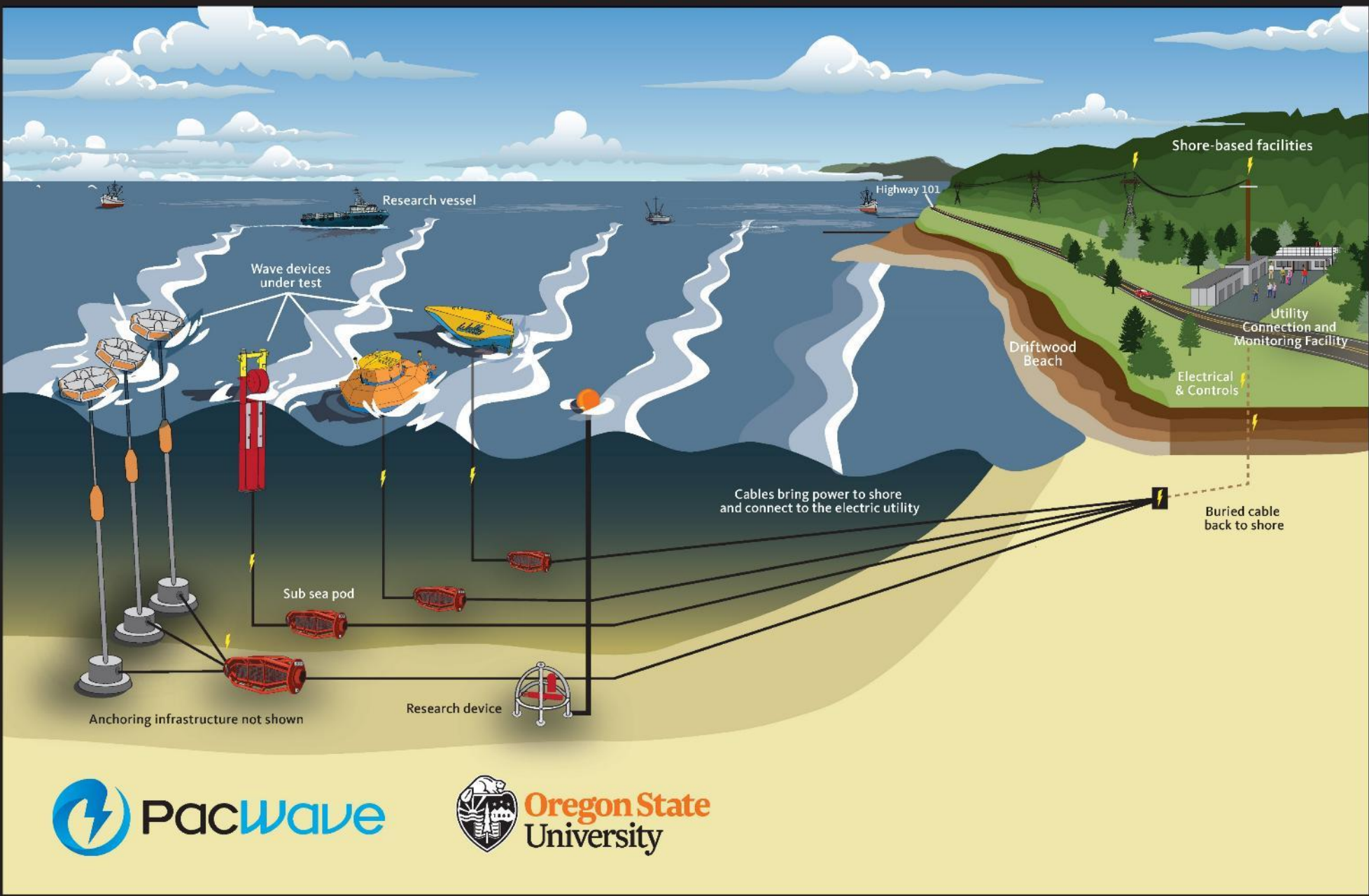
WET-NZ deployed at PacWave
Photo: Sean Moran

- The only grid-connected, pre-permitted, open ocean wave energy test facility in the U.S.
- Four power cables, 20 MW capacity, up to 20 devices
- Located 7 miles off the coast of Newport, OR
- Developed and operated by Oregon State University.
- Primarily funded by the U.S. Department of Energy
- Offers support for testing, R&D, demonstration, and full-scale deployments of wave energy systems and other innovative technologies
- Primary mission: support the national and international marine energy industries on their path to commercialization
- Secondary mission: enable and support research focused on the advancement of marine energy

Why Wave Energy?

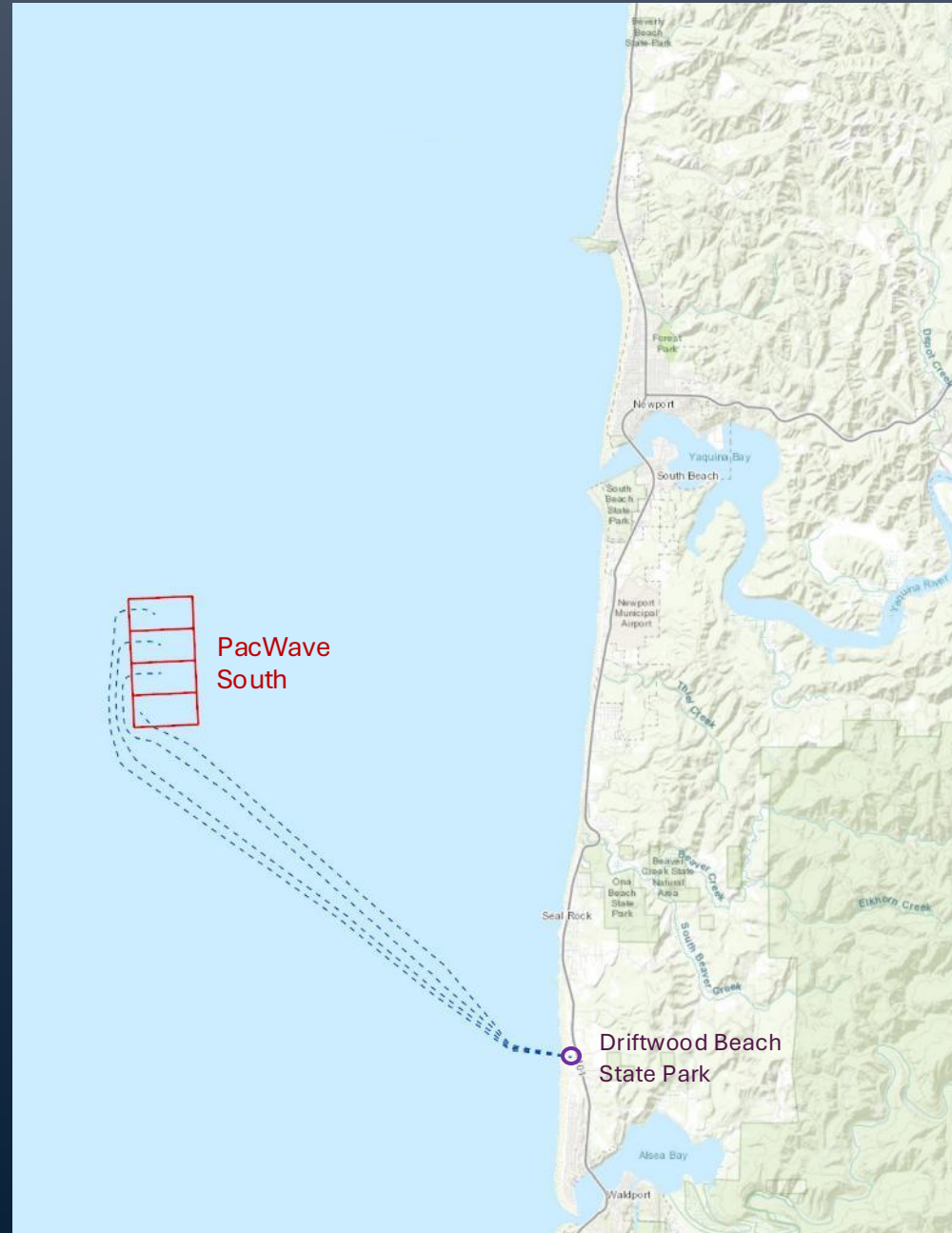


Marine Energy in the United States: An Overview of Opportunities
National Renewable Energy Laboratory (2021). NREL/TP-5700-78773.
<https://www.nrel.gov/docs/fy21osti/78773.pdf>.



Oregon State
University

PacWave South Location



Testing Infrastructure

- Limited testing infrastructure for technology development

Technology Development

- Lack of technology convergence
- Costs and timeframes associated with emerging marine technologies
- Low cost of competing renewable electricity generation

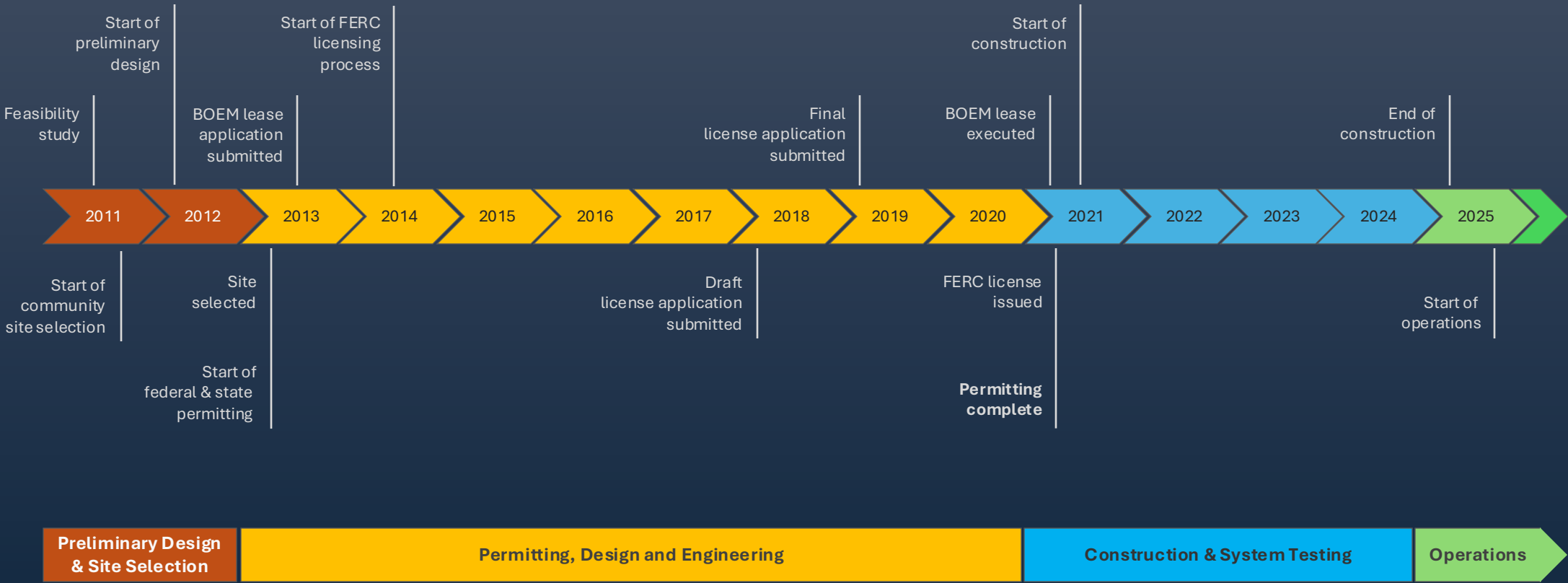
Regulatory and Environmental

- Perceived environmental uncertainty
- Multiple federal and state agency jurisdictions and regulations

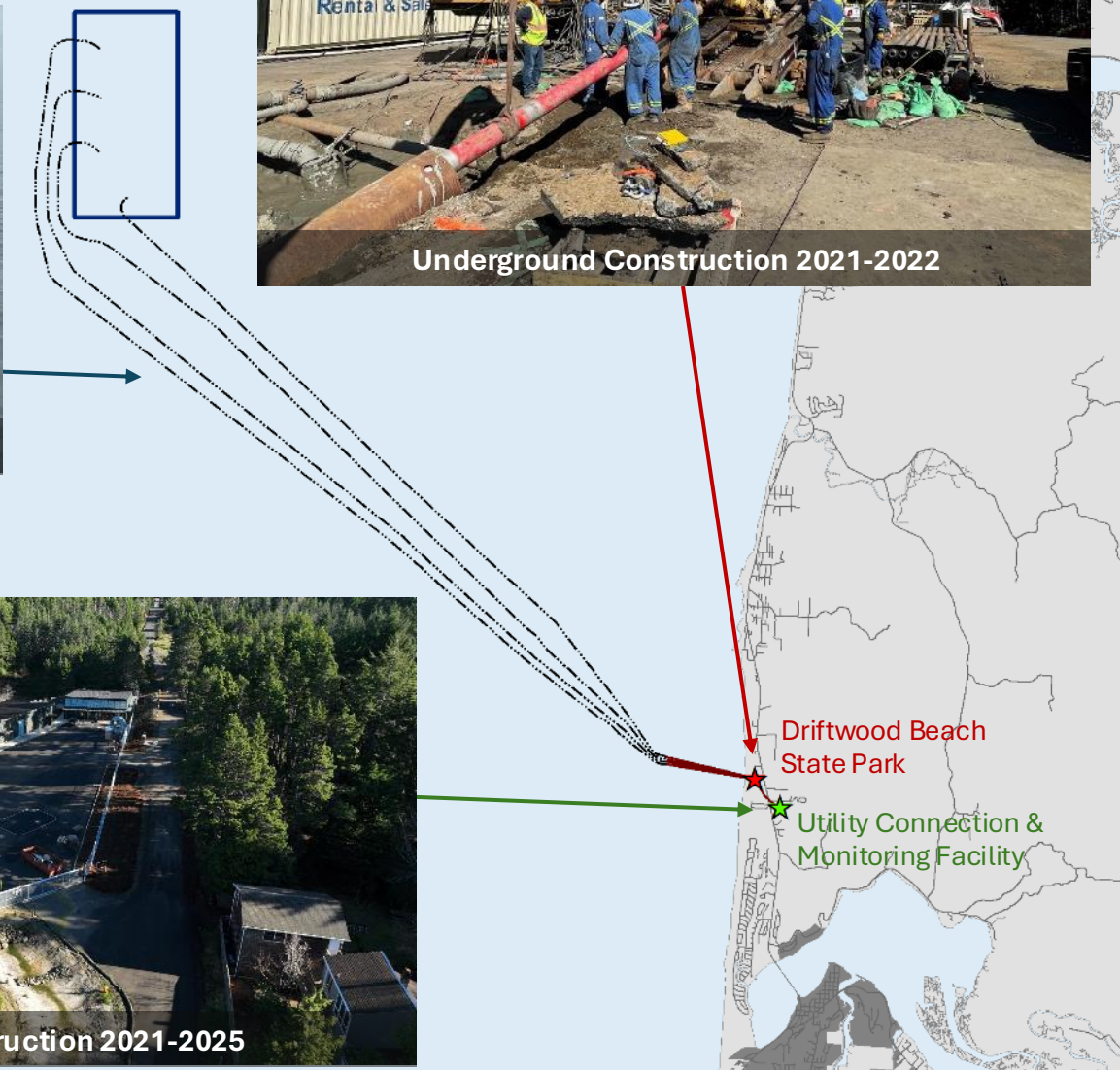
Funding

- Limited public and private investment

PacWave
South
Timeline



Construction Phases



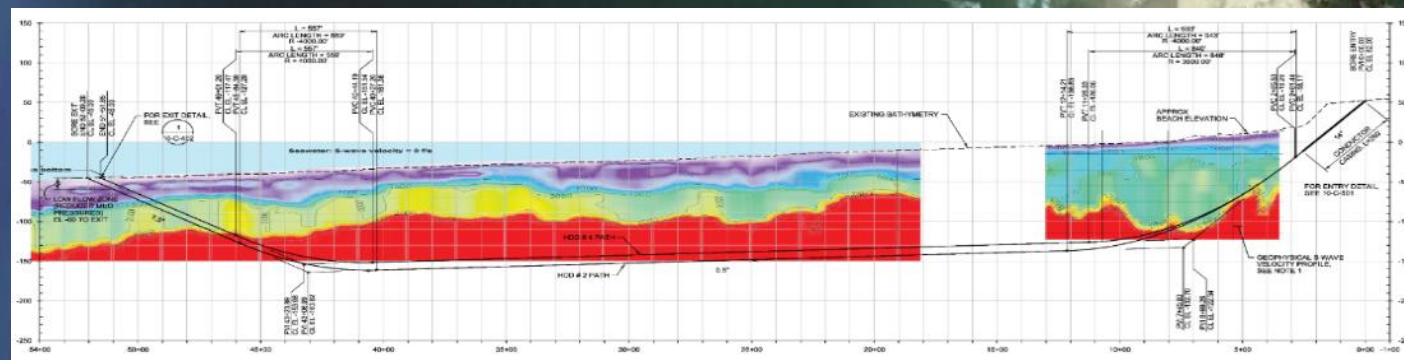
Subsea
Cables

HDD-installed
Offshore Conduits

Driftwood Beach
State Recreation
Site

HDD-installed
Terrestrial
Conduits

Utility Connection &
Monitoring Facility





Underground
Construction

Photograph:
Newport News Times



Underground Construction



Underground Construction



Underground construction work took almost a year.

A total of 6.2 miles of cable conduit were installed below ground.



Cable Landing Site (Driftwood Beach State Park) – May 2022



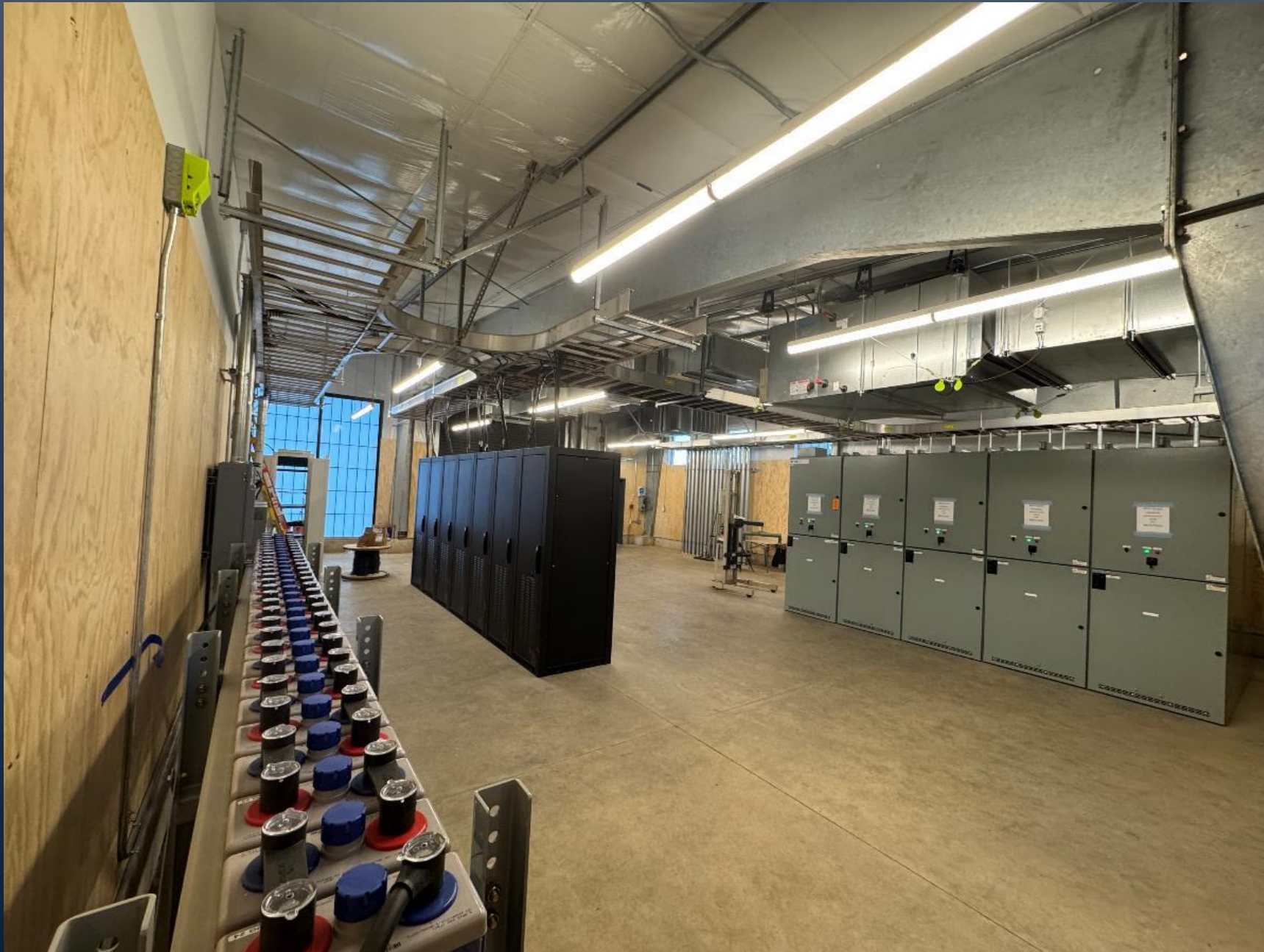
Terrestrial Construction





PacWave UCMF – February 2025

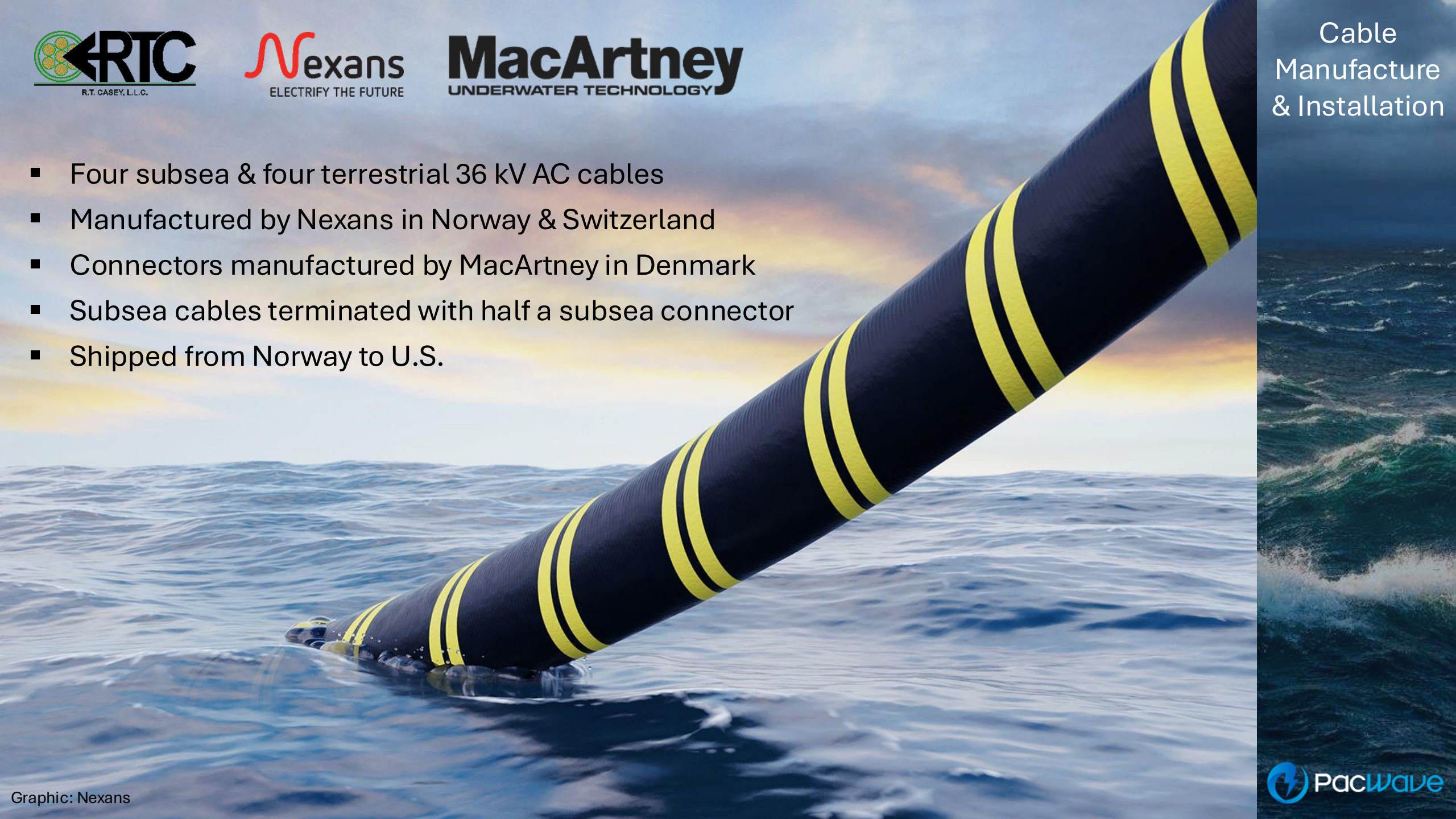
Switchgear Room





Cable Manufacture & Installation

- Four subsea & four terrestrial 36 kV AC cables
- Manufactured by Nexans in Norway & Switzerland
- Connectors manufactured by MacArtney in Denmark
- Subsea cables terminated with half a subsea connector
- Shipped from Norway to U.S.



Cable
Manufacture



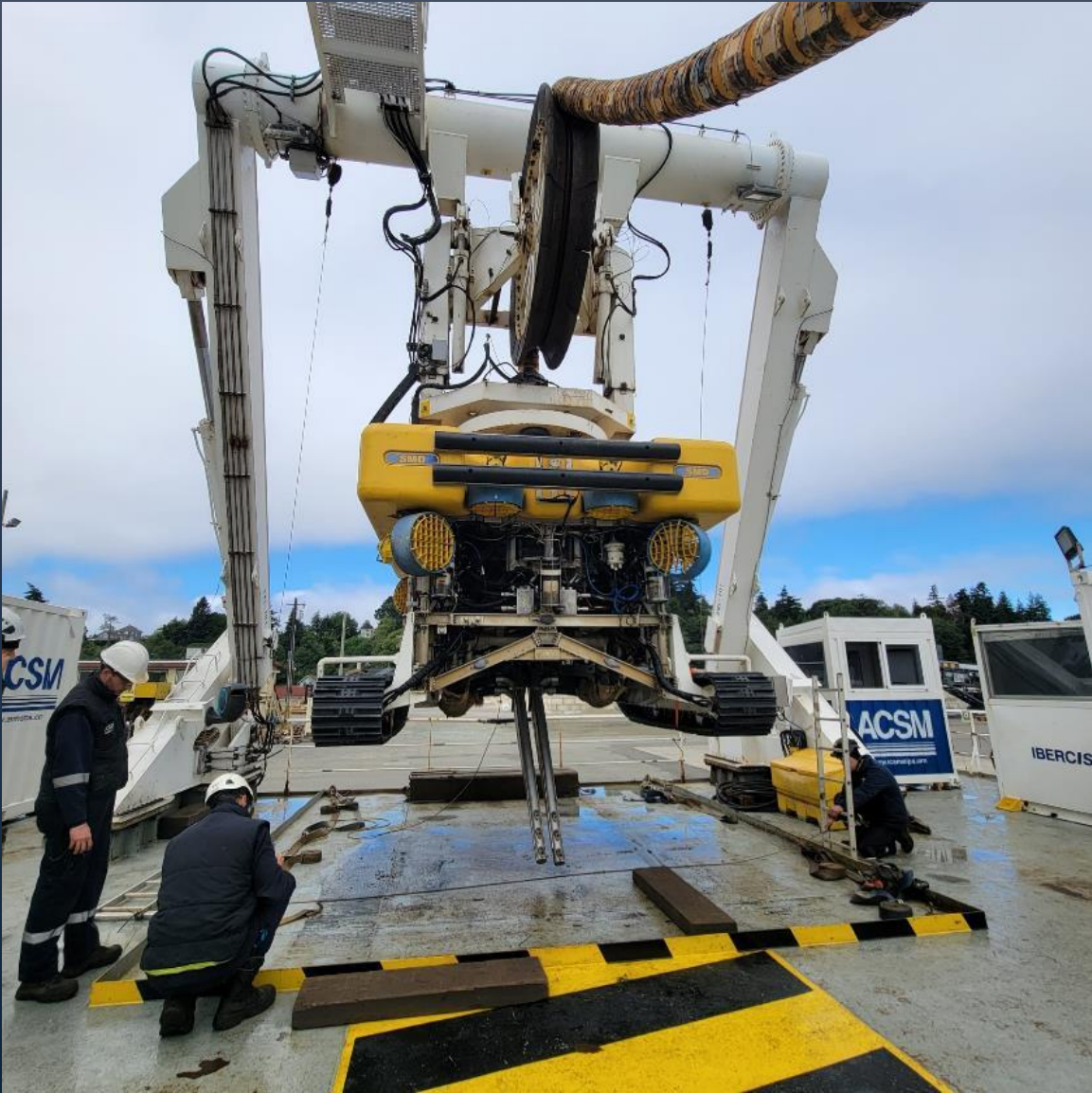
Cable
Manufacture





Cable Installation





Power Purchase Agreement with Bonneville Power Administration

- Executed September 2025 between OSU and BPA. Record of Decision for BPA to take the action published with no legal challenges. PPA is in full force.
- Five-year term with renewals to align with FERC license (25 year).
- No obligation to make any minimum amount of Test Energy (i.e. no scheduling requirements).
- Environmental attributes (e.g. green/blue tags) owned and held by BPA.
- Energy Price = CAISO Index (ELAP_BPAT-APND) x 0.75 (Cap of \$200MWh)
Future price can be negotiated in good faith to better reflect market value of Test Energy.



August 27, 2026 – PacWave Open for Testing



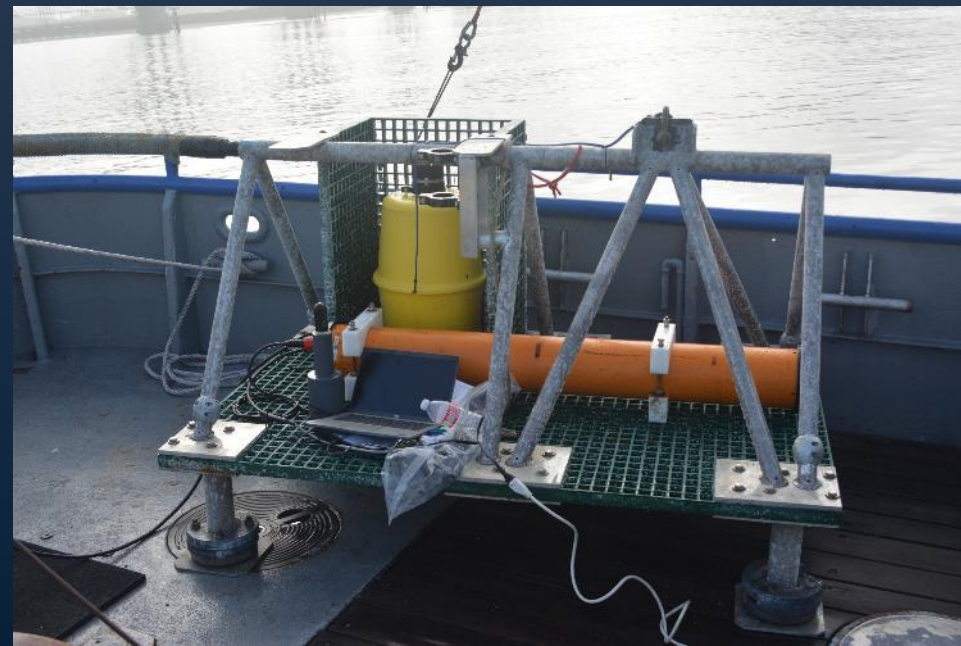
"Our oceans offer a largely untapped resource of abundant, affordable power. The PacWave South facility will help reduce testing barriers for wave energy developers and spur innovation to America's benefit for years to come."

**— Nichole Fitzgerald, Director,
U.S. Department of Energy
Hydropower and Hydrokinetic
Office (H20)**

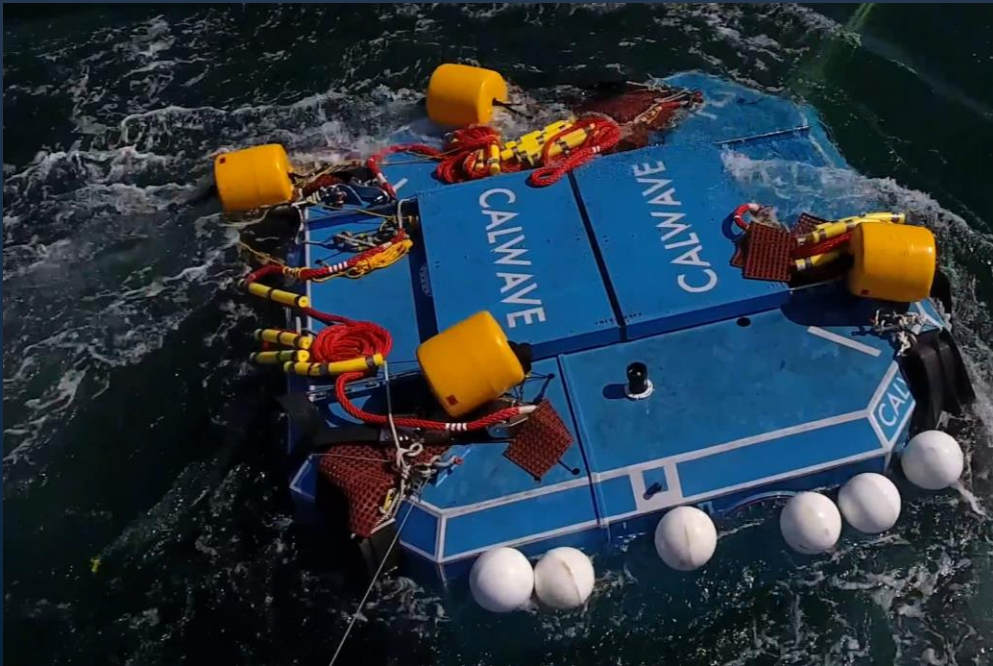
Transitioning to the Operational Phase

Current activities include:

- Seafloor (benthic) habitat and organism monitoring
- Acoustic monitoring
- Wave & current resource characterization
- Planning for WEC deployments at PacWave



Next Steps
for
Operations



Testing
Clients

CalWave

PacWaveEnergy.org



PacWave



Oregon State University
Hatfield



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