

NEW ENGLAND
AQUA VENTUS

NEAV I Update

Monhegan Plantation Community Meeting

June 22, 2022



Agenda

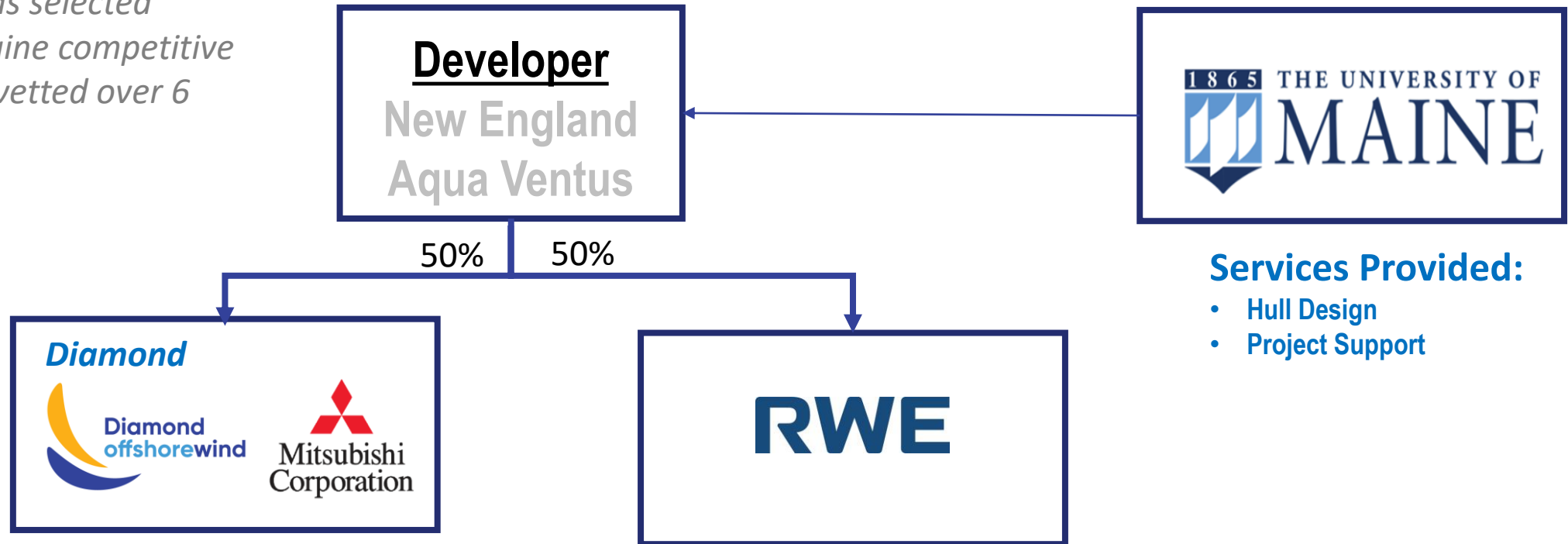
NEW ENGLAND
AQUA VENTUS

- Welcome and Introductions – Jim Buccheri & Rob Trotta
- Project Overview & Key Activities – Rob Trotta
- Permitting Activities – Dave Cowan
- Navigational Safety Plan – Dan Kennedy
 - Feedback Opportunity - Dan Kennedy & Attendees
- Questions & Answers – All



Who is New England Aqua Ventus?

Developer was selected through UMaine competitive process that vetted over 6 teams



Services Provided:

- Hull Design
- Project Support

Highlights:

- #1 in offshore wind transmission
- #7 in offshore wind projects

Highlights:

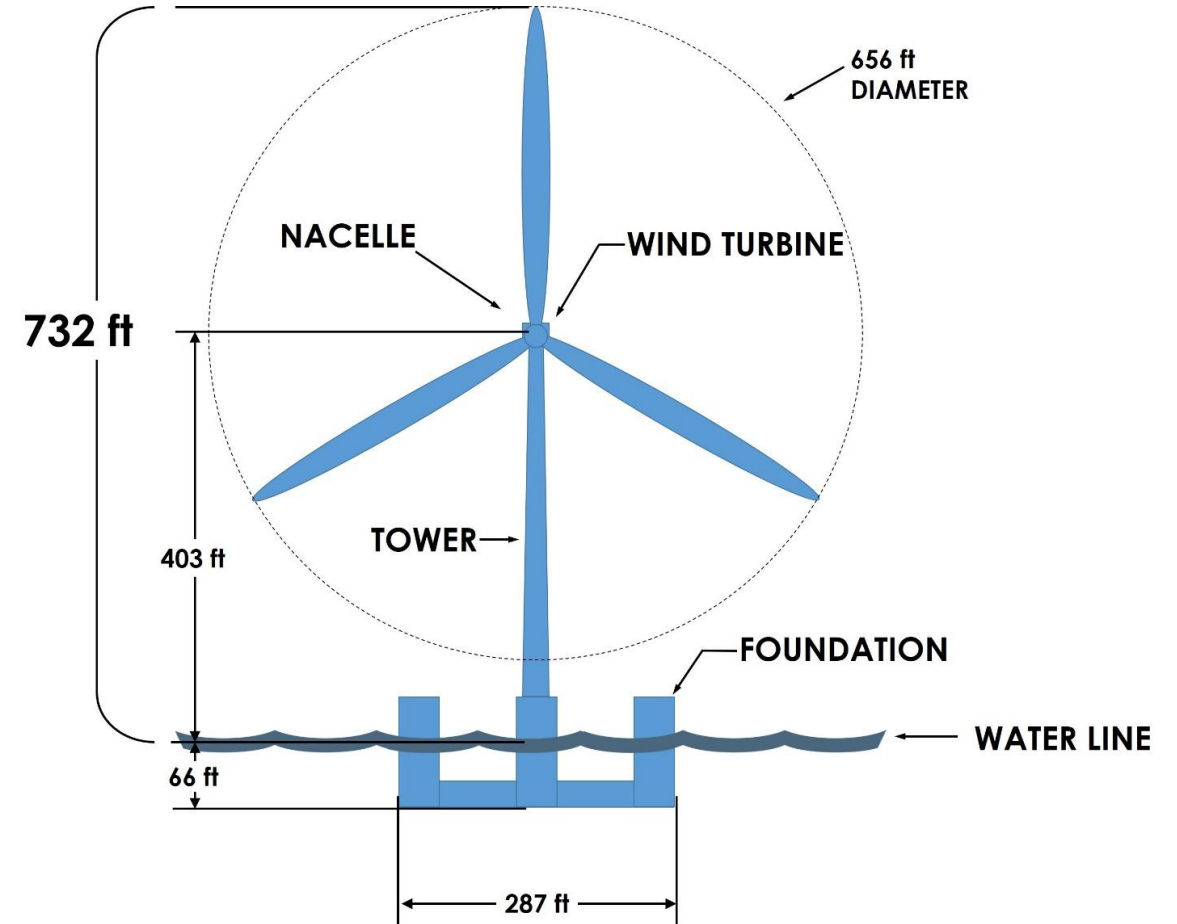
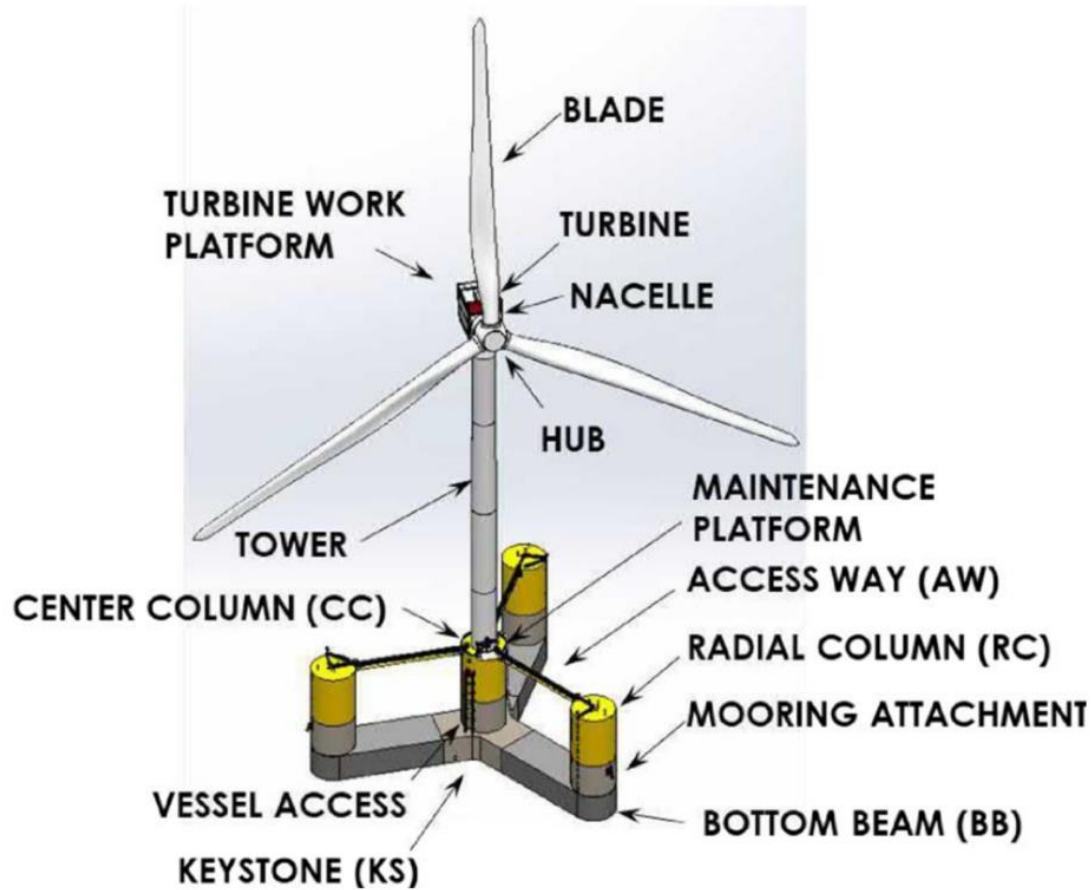
- #2 in offshore wind projects
- #4 in renewable projects
- Offshore wind design, construction, operations

Project Key Figures

- Single turbine, approximately 11 MW
- Water depth: 300 ft (91m)
- UMaine developed patented VoltturnUS concrete floating foundation concept
- Project Site Secured (State designated test site) – 2.5 miles (4km) South of Monhegan Island and 14 miles (27km) from the Maine coast
- PPA secured and passed legislation in 2019
- Portland office
- Connect to the grid in Boothbay region
- UMaine collaboration with Monhegan fishermen on fisheries R&D



Floating Offshore Wind Turbine



2 Environmental Reviews in Parallel

Federal Environmental Review

Environmental Assessment (EA)

- National Environmental Policy Act (NEPA)
- Comprehensive environmental review required for "major federal actions"
 - U.S. Department of Energy - Grants
 - U.S. Army Corps of Engineers – Permits
 - Joint EA – DOE/ACOE
- 30-day **Public Comment** period and **Public Meeting**

State Environmental Review

Maine General Permit for Offshore Demonstration Projects (§480-HH)

- Project Submittals:
 - *Marine Resources Report*
 - *Fish and Wildlife Monitoring Plan*
 - *Navigation Safety Plan*
 - *Decommissioning Plan*
- Monhegan Plantation will receive draft Plans for **Review and Comment**
- DEP will accept **Public Comments** during their review of the Plans
- DEP may also hold a **Public Meeting**

Additional Permits and Reviews with Opportunities for Public Input

Federal Agency Reviews:

- *National Historic Preservation Act* – **Public Input Opportunity**
- *Federal Aviation Administration* – Obstruction Evaluation – **Aviation Community Input**
- *U.S. Coast Guard* - Private Aids to Navigation (PATON) - **Public Input Opportunity**

Local Reviews:

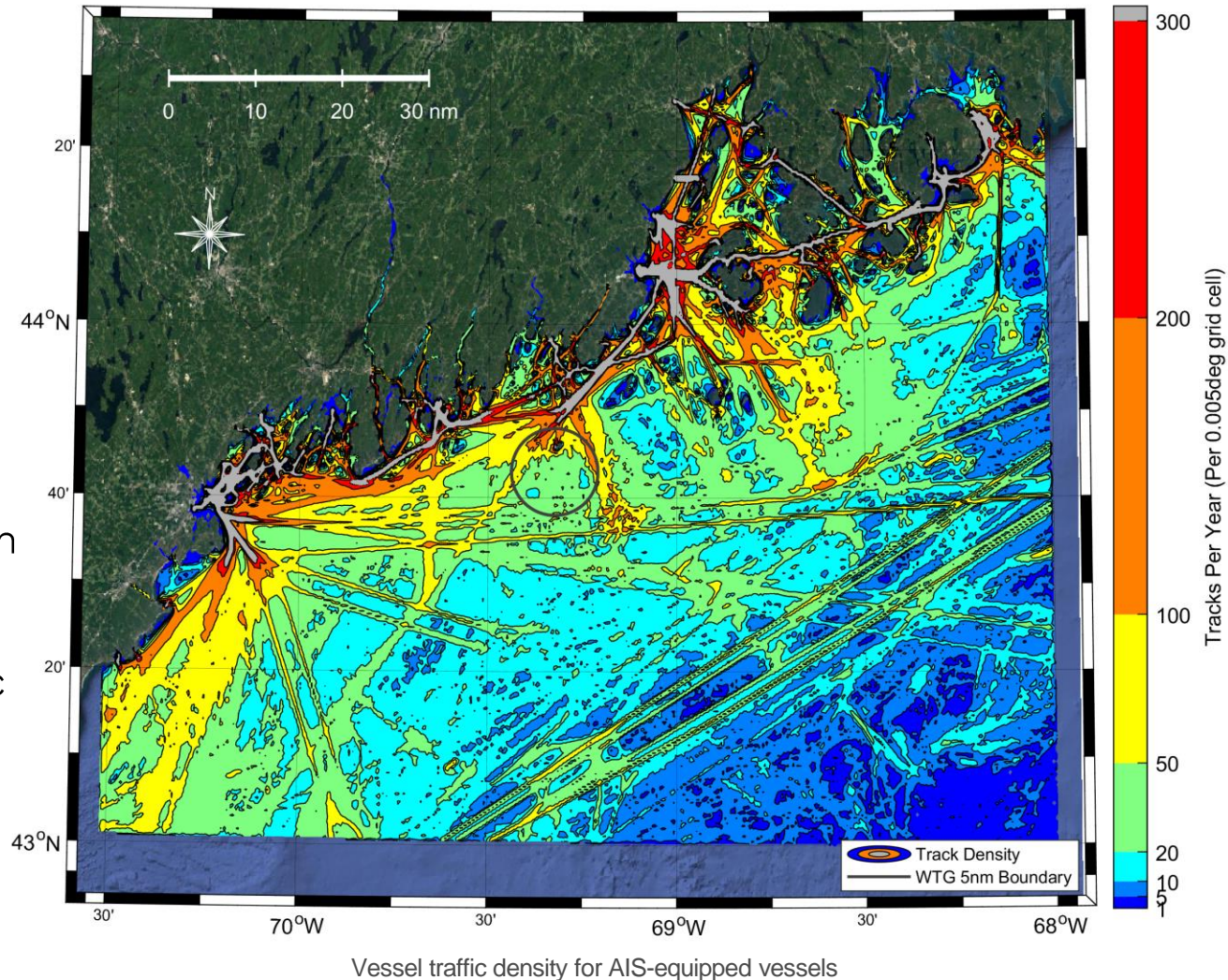
- Cable landing, interconnection and substation approvals
- **Public Input Opportunities TBD**

Staying Informed:

- Department of Energy NEPA site: <https://www.energy.gov/nepa/ea-2049-university-maines-new-england-aqua-ventus-i-offshore-wind-advanced-technology>
- New England Aqua Ventus (project developer) website: <https://newenglandaquaventus.com/>
- University of Maine project website: <http://maineaquaventus.com>
- METF website with project information and updates: <http://www.monheganenergy.info/>

Navigational Safety – NSRA & NSP

- **Navigational Safety Risk Assessment (NSRA):**
Prepared in accordance with USCG Navigation and Vessel Inspection Circular No. 01-19
 - Purpose – to provide information that the USCG will use to evaluate the potential impacts of an Offshore Renewable Energy Installation (OREI) on the Marine Transportation System (MTS), navigation safety, the traditional use of the waterways, and Coast Guard missions.
- **Navigational Safety Plan (NSP):**
Prepared in accordance with Maine Legislature Section 480-HH: General permit for offshore wind energy project
 - Purpose – to develop a plan to protect the public and project facilities from navigational hazards.
- Presentation focuses on lighting and marking, full reports will be available for public comments



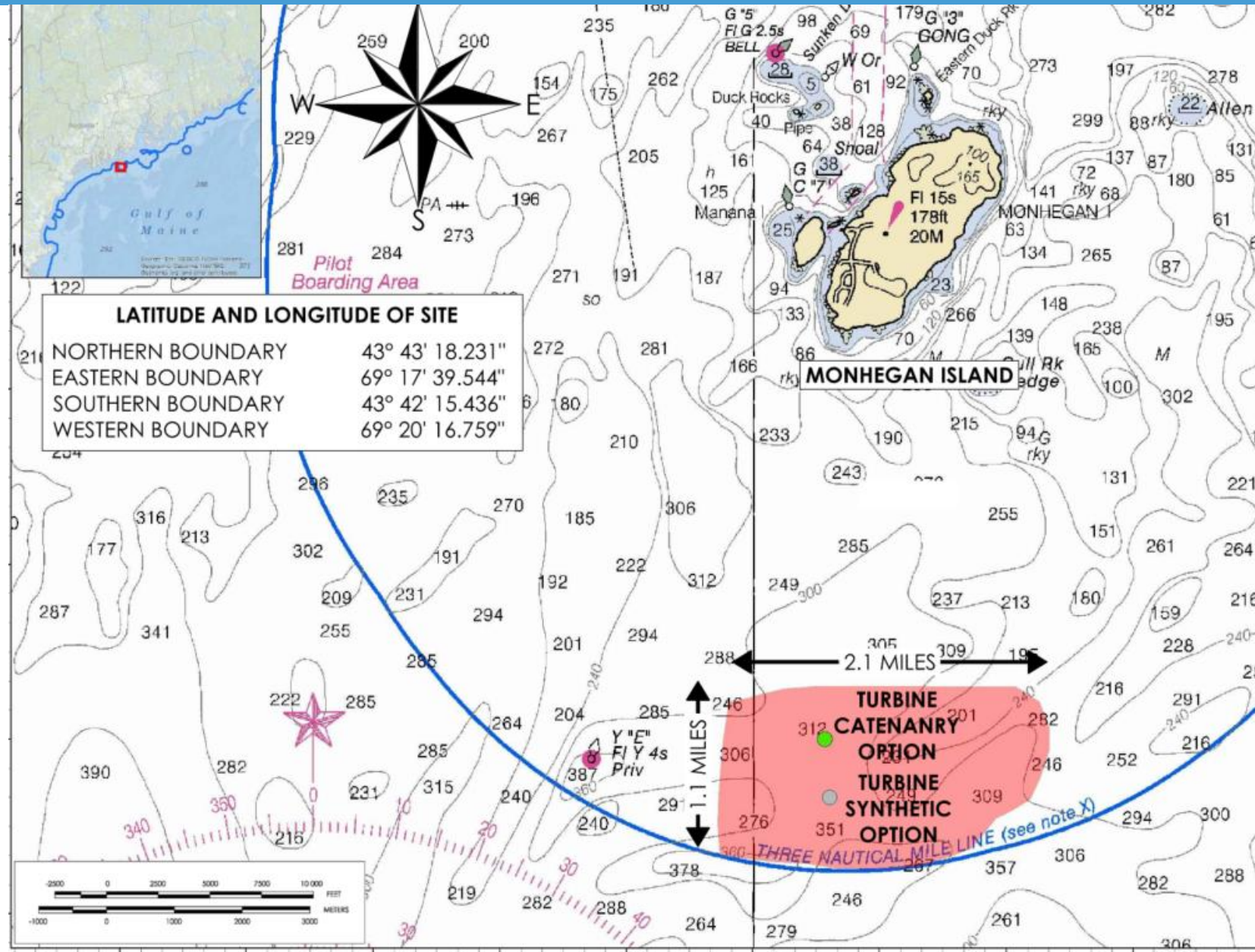
New England Aqua Ventus is the developer of the University of Maine's New England Aqua Ventus I project.

Information on the Department of Energy's Environmental Assessment for the project can be found at: www.energy.gov/node/2053718

Turbine Locations UMaine Deepwater Offshore Test Site

Navigational Safety Considerations

- Navigational safety study assesses above and below water components
- Above water – turbine and part of foundation
- Below water – remainder of foundation, stationkeeping system and cable
- 2 options for stationkeeping
- Catenary system – steel chain
- Hybrid – steel chain and polyester rope
- Footprint reduction with Hybrid system, detailed engineering on-going to confirm feasibility



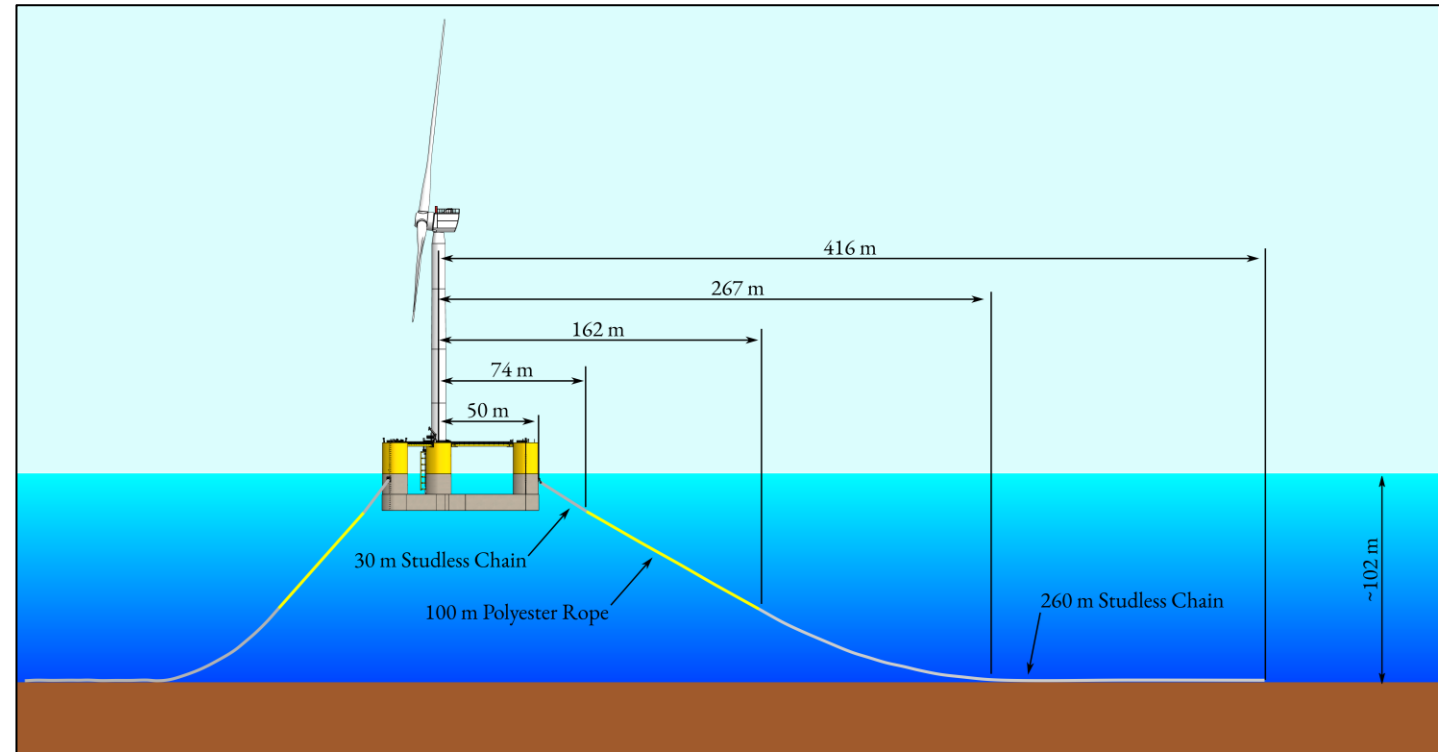
Stationkeeping System – Hybrid & Catenary

Hybrid System

- Steel chain segments top and bottom, polyester rope middle section
- Polyester rope resilience study on-going
- Approx. 876 ft (267m) from center turbine to touchdown point on seabed
- Approx. 1365 ft (416m) from center turbine to anchor point
- Engineering on-going to select catenary or hybrid system

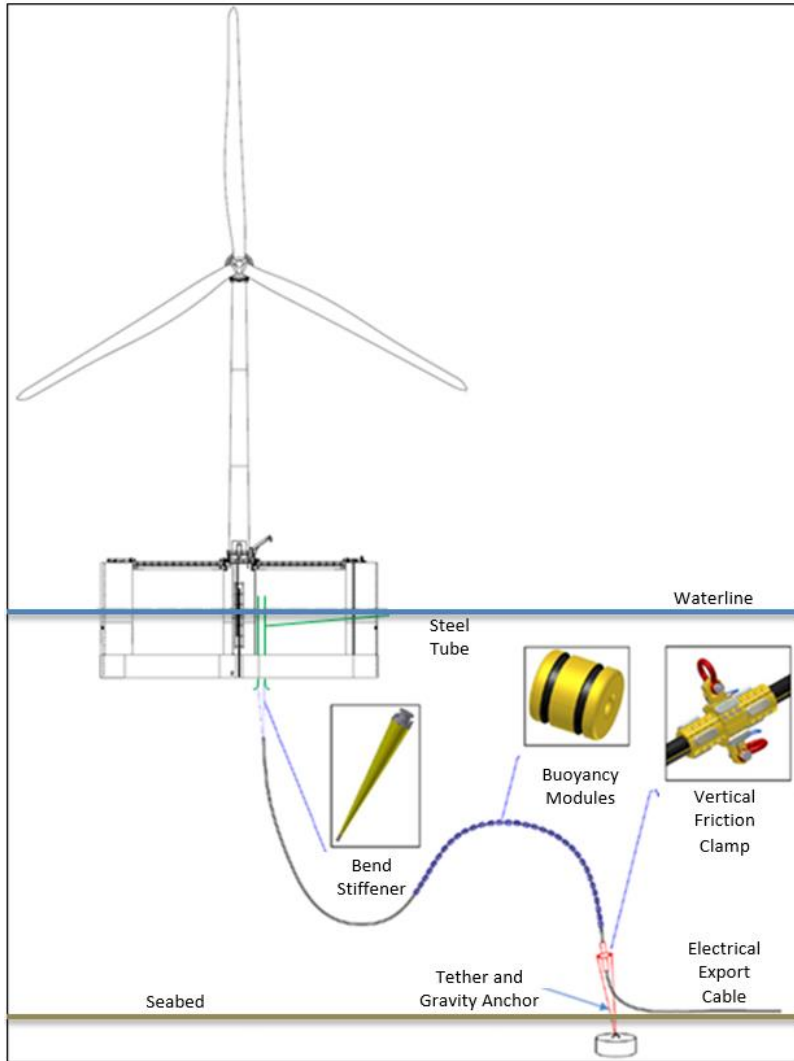
Catenary System

- All steel chain system
- Resilient to damage
- Approx. 656 ft (200m) from center turbine to touchdown point on seabed
- Approx. 2,333 ft to 2,900 ft (711m to 884m) from center turbine to anchor point

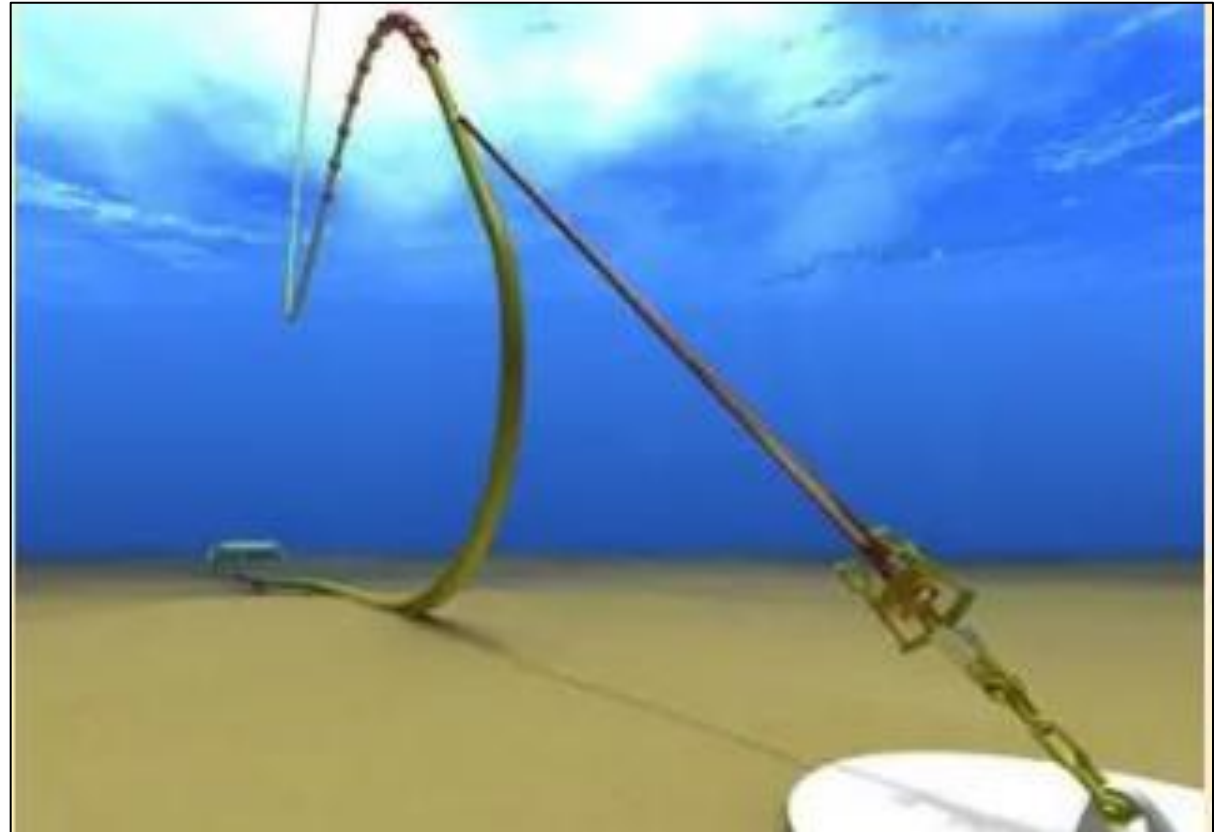


Hybrid Stationkeeping System

Dynamic Cable



Dynamic cable to be marked as part of the project lighting and marking plan



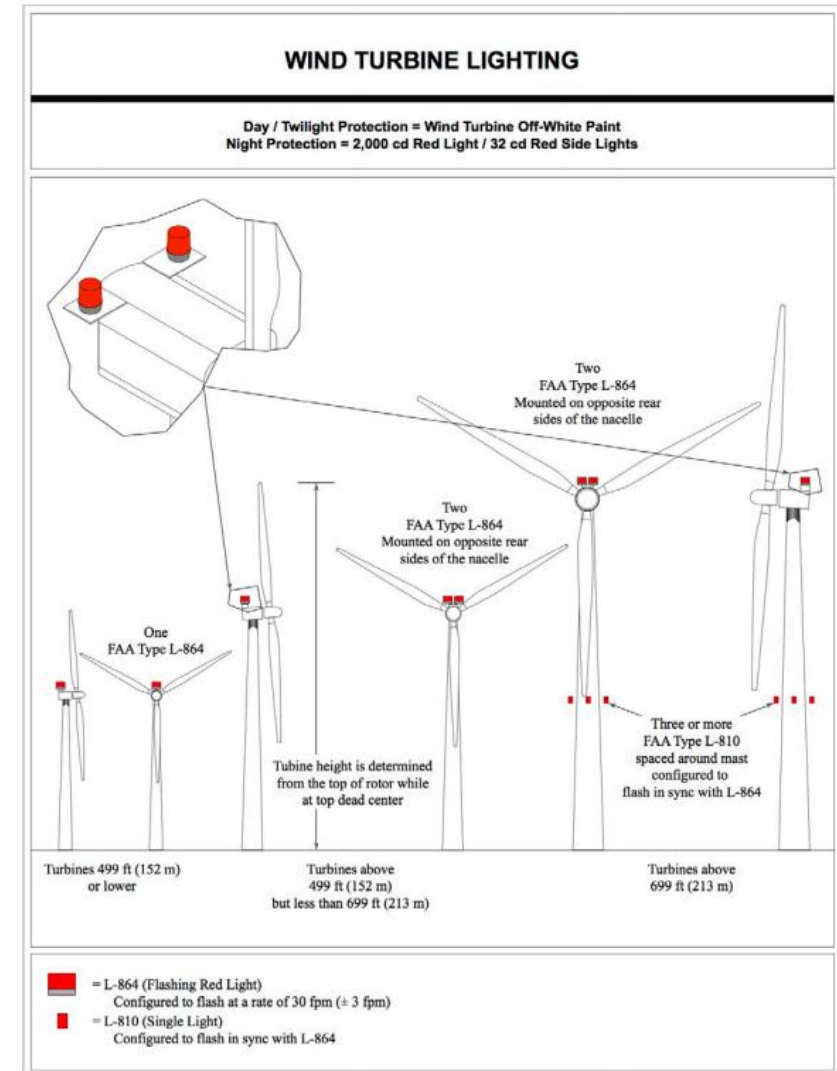
Floating Structure Color

- In accordance with existing requirements, the WTG color will be no lighter than RAL 9010 Pure White and no darker than RAL 7035 Light Grey in color.
- The floating foundation center and radial columns shall be painted yellow (RAL 1023) all around from the mean water level to the deck level
- Ladders at the foundation base will be painted in a color that contrasts with the yellow.



Aviation Lighting


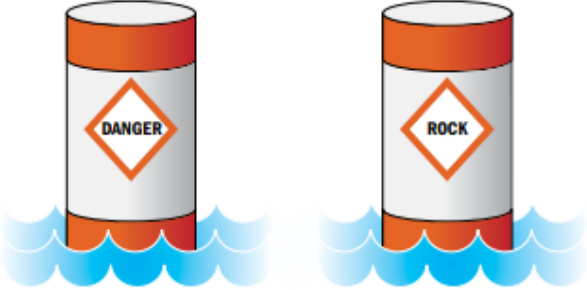
- Nacelle: Two (2) FAA Type L-864 lights
- Tower: Three (3) or more FAA Type L-810 spread around the tower configured to flash in sync with L-864

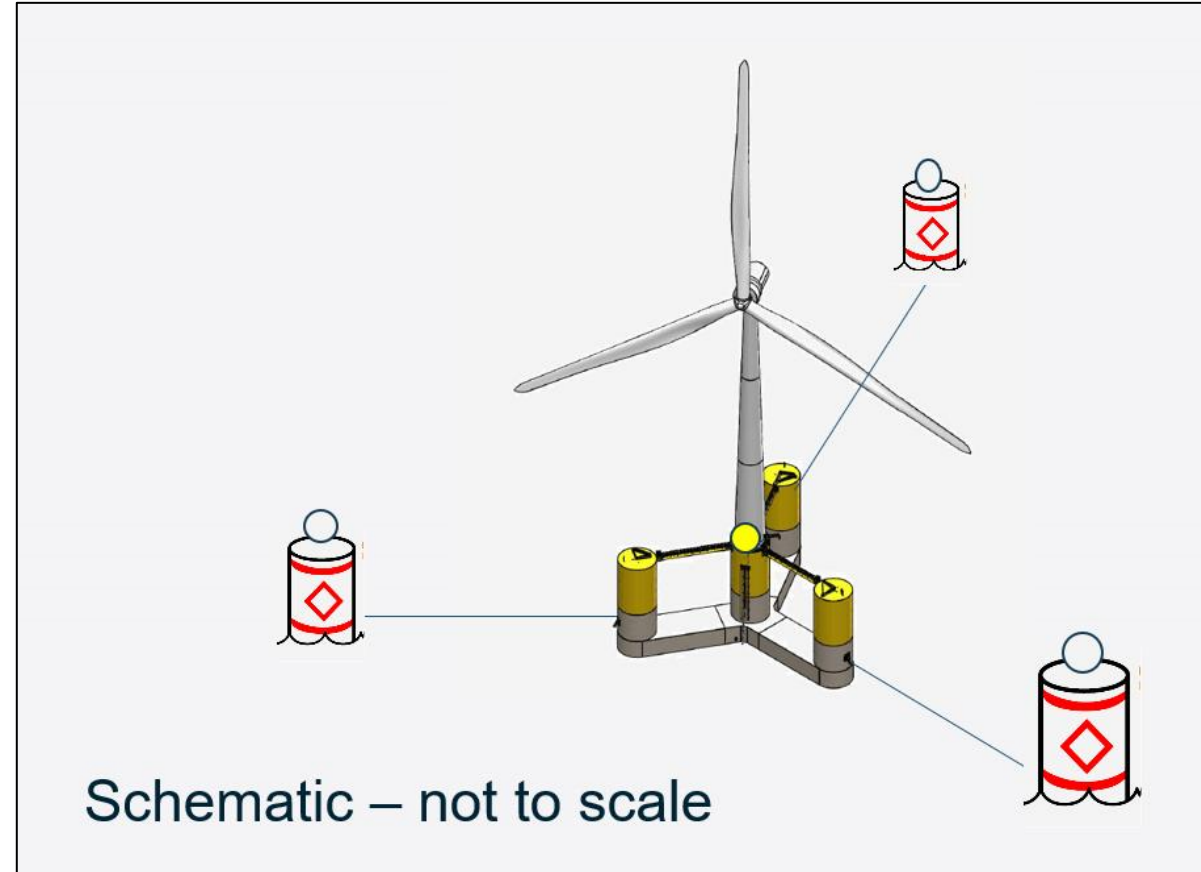


Navigational Aids – Buoys

Buoys

- Buoy requirements / type coordinated with the USCG
- Each anchor shall be marked with a lighted danger buoy
- Lit with flashing white flashing light a 5NM range

Symbol	Meaning	Examples
	Danger A diamond shape alerts boaters to hazards	



Navigational Aids – Lighting and AIS

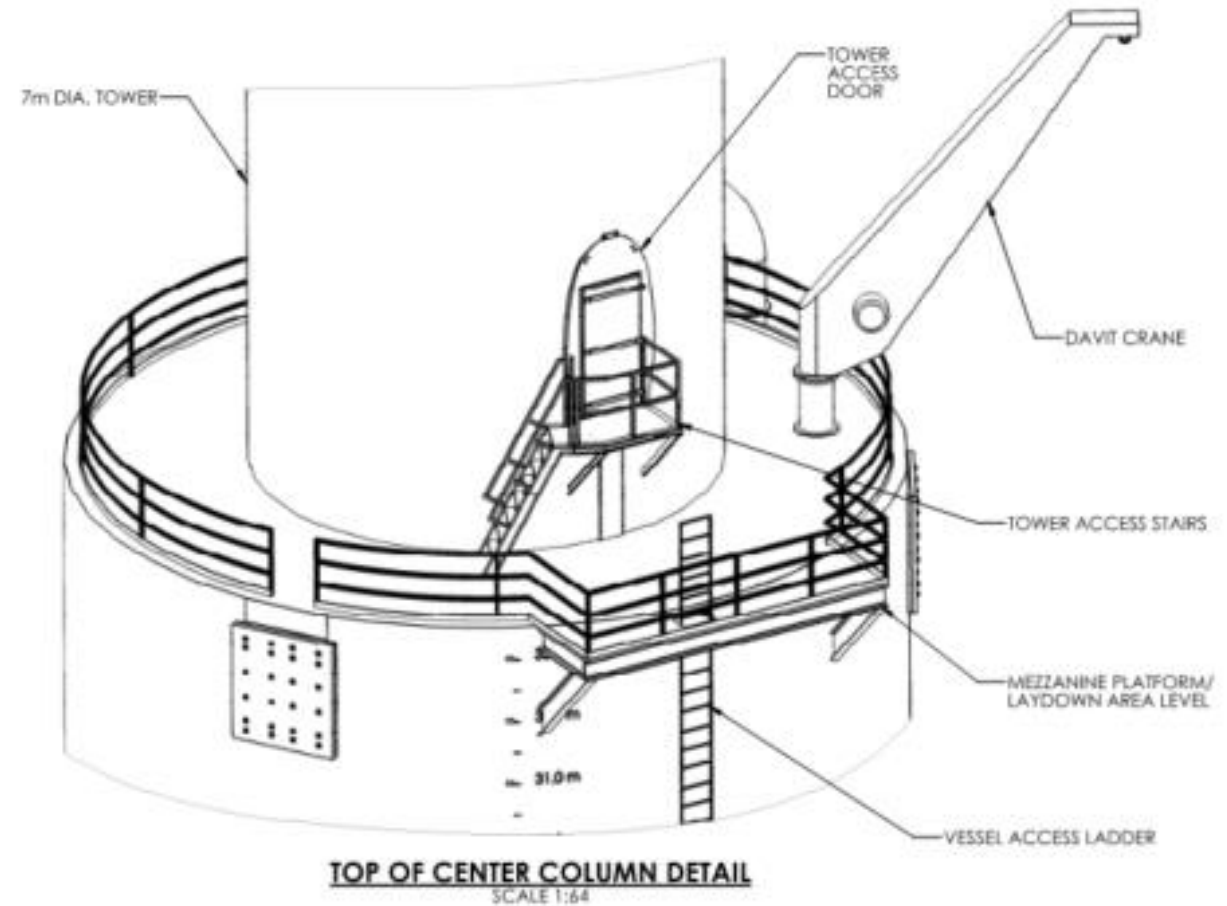
- Quick yellow flashing marine lanterns, 360 deg, 5nm range
- Dynamic cable marking: red marine lantern with sector blind
- Automatic Identification System (AIS): position reporting of FOWT, anchors and dynamic cable



Marine Lantern



AIS Unit



NEAV will provide required information to USCG and / or NOAA to add the WTG structure, stationkeeping legs / anchors, dynamic subsea cable, subsea cable route, and all associated PATONs appropriate navigation charts. NEAV recommends the following note be placed on the appropriate navigation charts:

Vessels entering and departing Penobscot Bay near Monhegan Island, Maine should exercise caution in the area of a floating wind turbine generator located in position 43°42'59"N 69°19'26"W. All vessels and persons are advised to avoid anchoring, diving, dredging, dumping, mobile fishing, trawling, laying cable, or conducting salvage operations in this area.

The cable route will be mapped at high accuracy during installation and is recommended to be shown as an individual cable route, as opposed to a cable area.

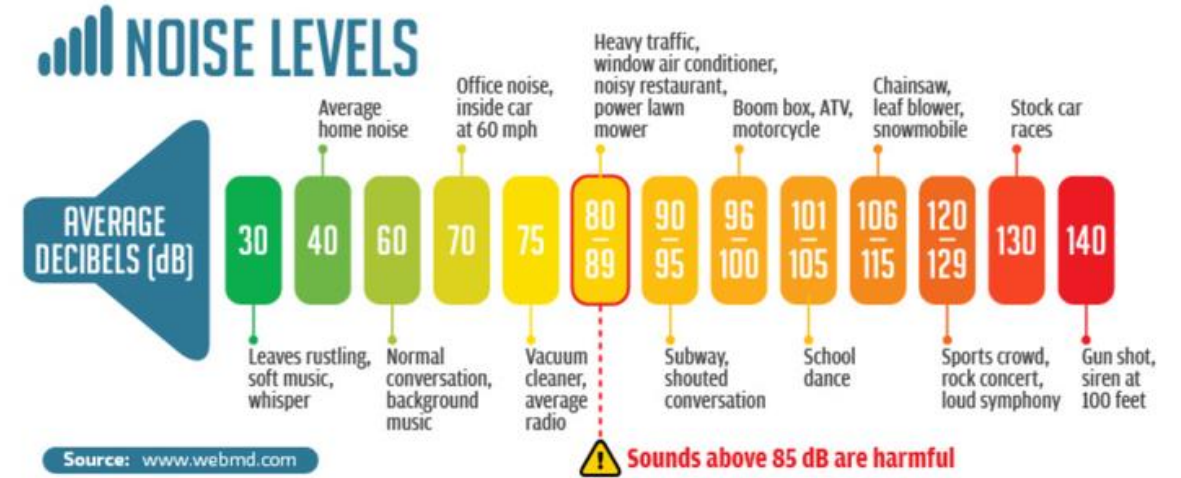
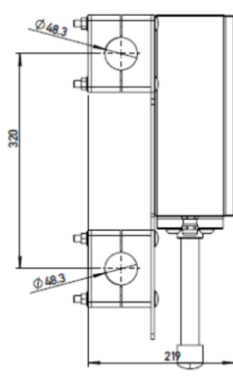
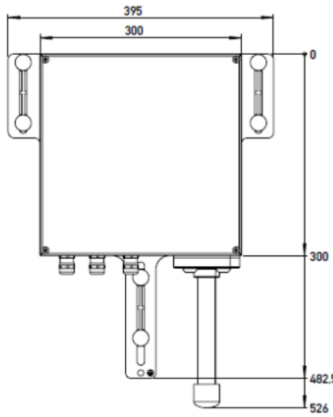
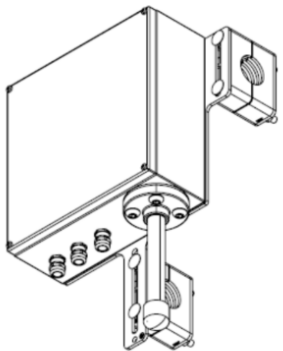
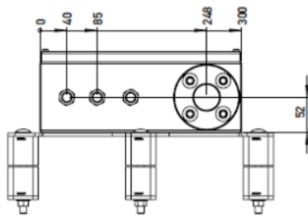
Navigational Aids – Sound Signal References

A sound signal, as referred to as fog signal or hazard warning signal, is used to assist navigation during inclement weather where visibility is less than 2nm. The sound signal is referenced in the following:

- **Maine 480HH 3.F:**
 - “The plan must, at a minimum, consider the need to provide as appropriate...(3) Marking the generating facility with fog signals...”
- **USCG NVIC No. 01-19, 13. Facility Description:**
 - “...the developer’s NSRA should include a description of the following characteristics related to the proposed structure...(4) If the site would be fitted with a sound signal, the characteristics of the sound signal, and where the signal or signals would be placed”
- **BOEM Guidelines for Lighting and Marking of Structures Supporting Renewable Energy Development, Section III.A Sound Signal:**
 - Sound signal devices should be placed on all SPS and on IPS as necessary to ensure spacing between devices does not exceed 3 nmi
 - Each device should sound a 4-second prolonged blast at intervals not to exceed 30 seconds with a range of 2 nmi
 - Each device should be capable of Mariner Radio Activated Sound Signal (MRASS) activation by keying VHF radio frequency 83A 5 times within 10 seconds and must continue to sound its signal for 45 minutes after VHF activation.
- **IALA G1162, 2.1.2 (1):**
 - “If implemented, it is recommended that hazard warning signals (HWS) meet the minimum requirements identified by the competent authority. The recommended requirements are they:
 - are ideally located not less than six meters and not more than 30 meters above the highest astronomical tide (HAT);
 - have a minimum range of two nautical miles;
 - have the character Mo (U) 30s with a minimum duration for the short blast of 0.75s; and
 - are operated when the meteorological visibility is two nautical or less – a visibility detector will typically be used.

Navigational Aids – Sound Signal Device

Marine Activated Sound Signal (MRASS): contains a VHF receiver that monitors channel 83A, when a mariner is keying the microphone 5 times within 10 seconds the MRASS unit activates the sound signal on the structure. Once activated sound signals blast for 45 minutes. Device can also be programmed to activate the sound signal for 15, 30 or 60 minutes.



Sound Signal:

- 360° coverage with 3 sound signals on center column
- 2nm and 0.5 nm range available
- Can be activated by MRASS or visibility meter
- Sound level at Mohegan Island with three 2nm units on the order of 60 dB
- Sound level at Monhegan Island with 0.5 nm range unit facing the Island could reduce sound levels on the order of 5 to 10 dB



Event: Monhegan Island Community Meeting

Where: Monhegan Island

Date: June 22nd, 2022

Time: 5:30 to 9:00 PM

Return: At event, to Town of Monhegan or
email dkennedy@dowind.com by June 29, 2022

Sound Signal Activation

- ☐ Visibility Meter – activates when sensor detects visibility less than 2nm
- ☐ MRASS – activates when mariner keys VHF Station 83A 5 times within 10s

Sound Signal Range

- ☐ All three sound signals with 2nm range
- ☐ Two sound signals facing away from Monhegan Island 2nm range, One sound signal facing Monhegan Island with 0.5nm range
- ☐ All three sound signals with 0.5nm range

Sound Signal Duration Once Activated

- ☐ 15 minutes
- ☐ 30 minutes
- ☐ 45 minutes
- ☐ 60 minutes

