# CVOW Technical Modification Review
## Overview

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# CVOW Modifications

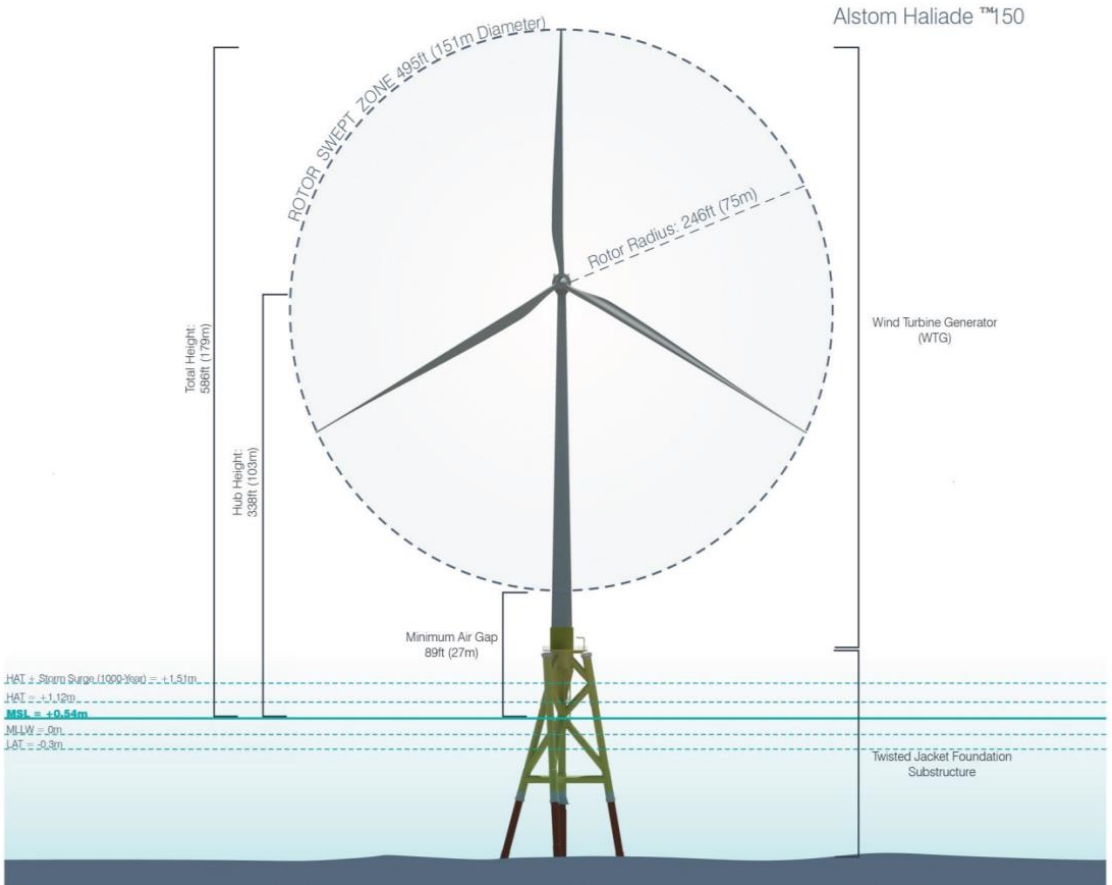
- Turbine Foundations

- Scour and Sand Wave Hazard and Mitigation

- Updated Design Standards

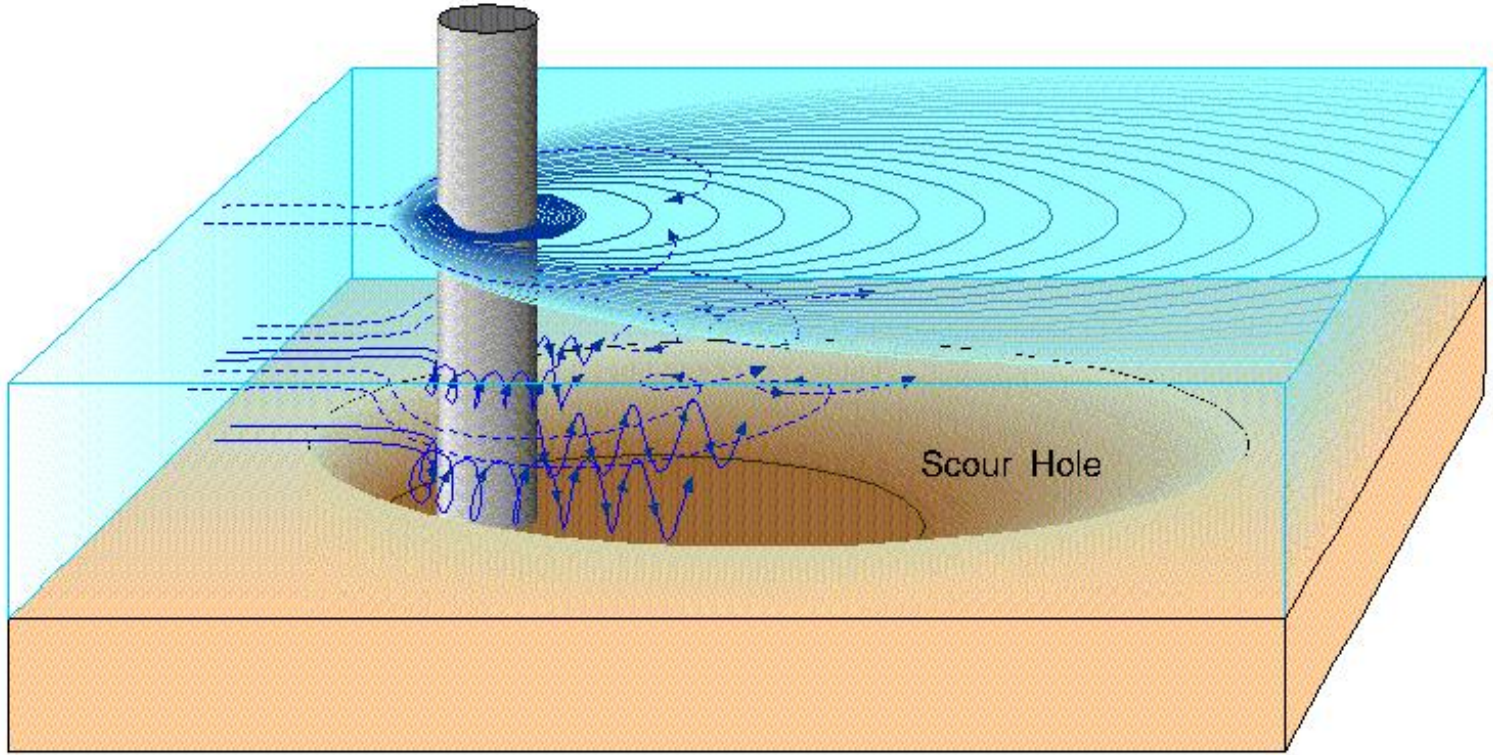
- New BOEM Studies

# **Turbine Foundations:** VOWTAP- Inward Battered Guide Structure Foundation



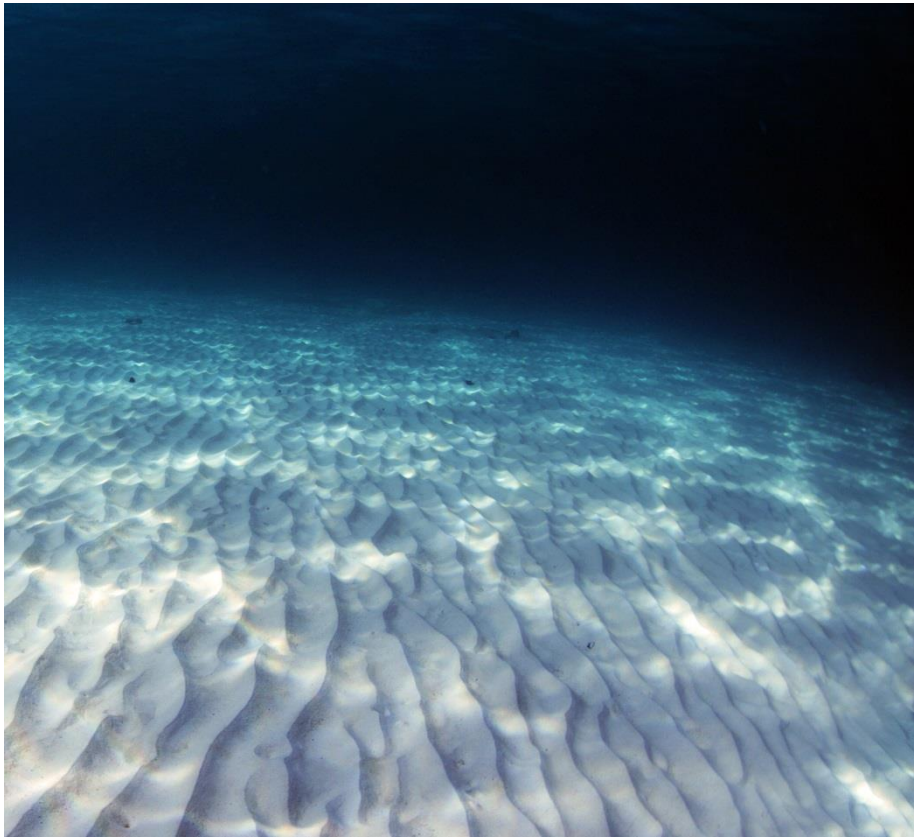
# **Turbine Foundations:** CVOW- Monopile (typ.)

# Scour



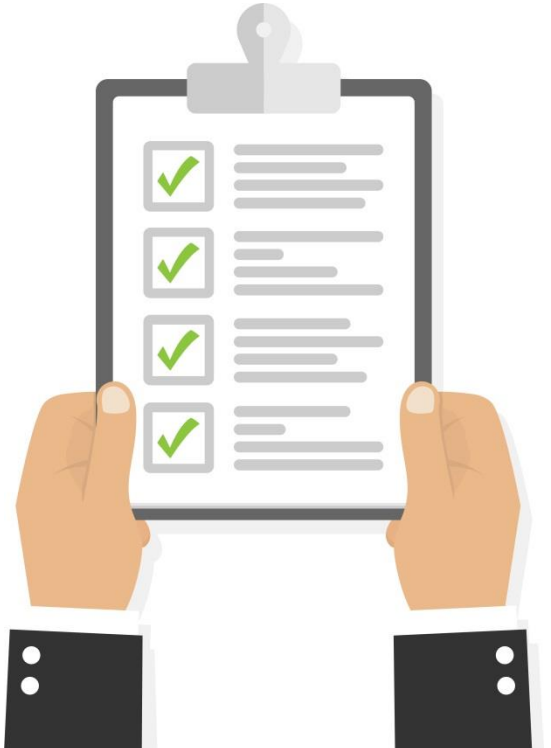
# Sand Waves

- Height - 0.5 to 2.5 m
- Wavelength - 28 to 98 m
- Migration Rates- several meters per year



# Design Standards

- **IEC 61400-3-1** update,
  robustness check for hurricane loads
- **DNV GL ST 0126, RP C212**,
  updated geotechnical design
- **AWEA OCRP 2012** update process



# New BOEM Studies

- **Munitions and Explosives** of Concern Survey Technology and Infield Testing for Wind Energy Areas on the Atlantic Outer Continental Shelf, OCS Study, *by Calibre, 2017*

- **Geophysical & Geotechnical Investigation** Methodology Assessment Guidelines for Siting Renewable Energy Facilities on the Atlantic OCS, *by Fugro, 2017*

- **Metocean Characterization** Guidelines for U.S. Offshore Wind Energy, *by DNV-GL, In Progress*

- Technology Assessment Program (TAP), cyclic pile design, suction buckets, breaking waves, structural modeling, cable and ESP standards

# Questions?

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**Additional Information:**

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www.boem.gov/Renewable-Energy-State-Activities