

A photograph of an offshore wind turbine in the ocean. The turbine is white with a red nacelle. The ocean is a deep blue, and the sky is a clear, light blue. Another wind turbine is visible in the distance.

# **Coastal Virginia Offshore Wind**

**Tidewater Angler's Club**

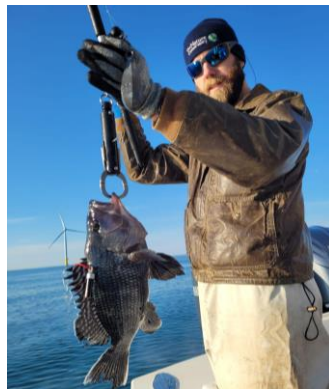
**Ron Larsen – Fisheries Liaison**

**09-April-2024**

- CVOW Pilot Project Description
- CVOW Commercial Project Description
- Commercial Construction Timeline
- Navigation Safety
- Resource Studies
- Q&A

# CVOW Research (Pilot) Project

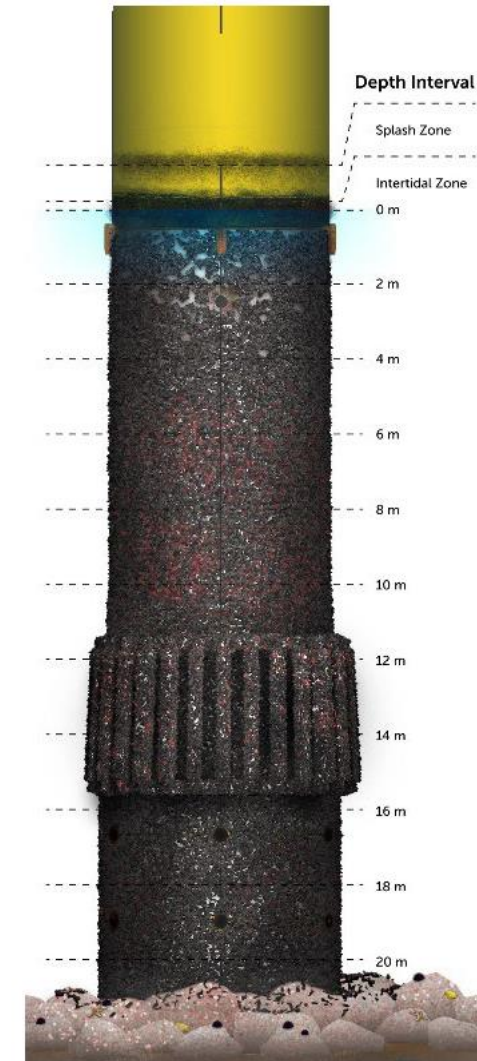
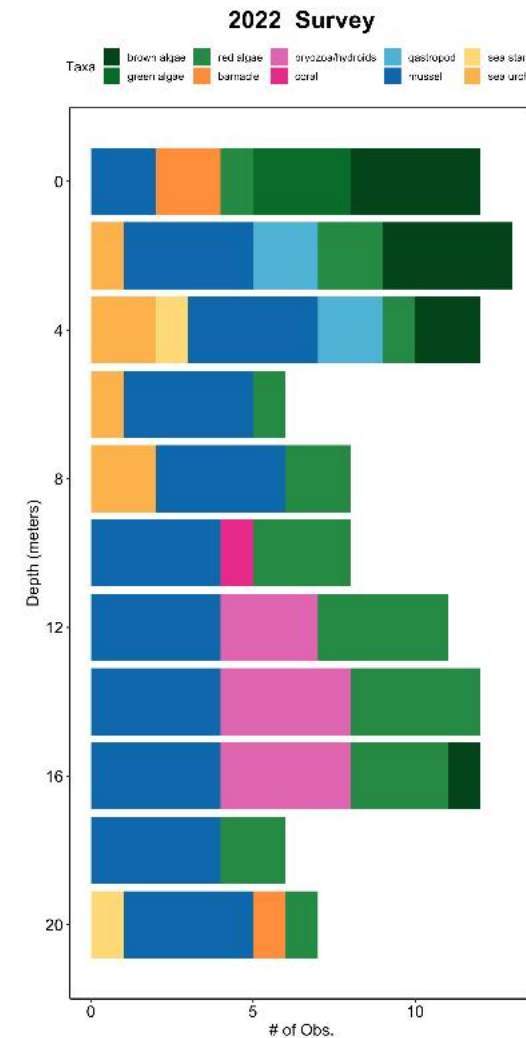
- First US offshore wind project installed in federal waters.
- Two 6MW Wind Turbine Generators (WTGs), 12 MW total capacity, power up to 3,000 homes
- Located within a 2,135-acre research lease area, 27 miles off the coast of Virginia Beach
- Installed JUN-2020, began producing power OCT-2020
- BOEM Realtime Opportunity for Development Environmental Observations (RODEO) Program [Field Observations During Offshore Wind Structure Installation and Operation](#)
- The Nature Conservancy Acoustic Monitoring and Tagging [Study](#)



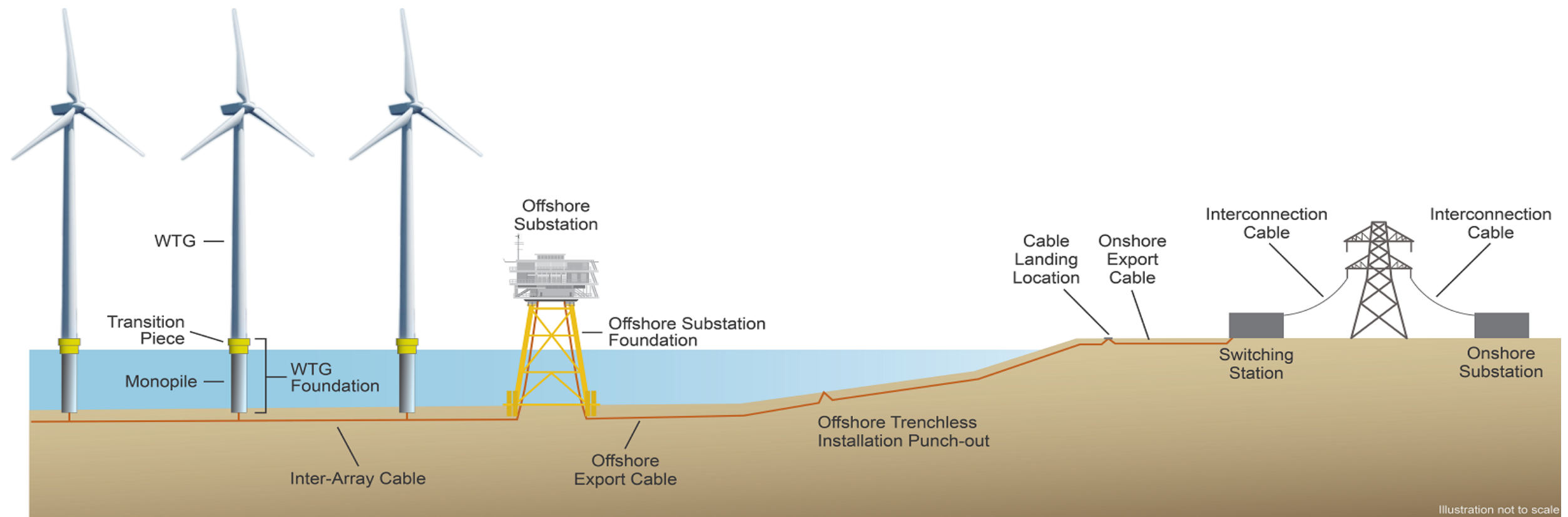
# Recreational Fishing Opportunities

- Surveys conducted by Dominion Energy and reports from recreational anglers and divers indicate abundant life
- Monopoles act as vertical reef structure, holding fish and bait from top to bottom
- Anode cage, about 40' down from surface, creates structure off the bottom, filled with mussels
- Base of the turbine has rock layer (Scour Protection) that extends approximately 75' from the monopole

[Virginia Beach Windmill Fishing \(Cobia, Mahi, Seabass\) - YouTube](#)

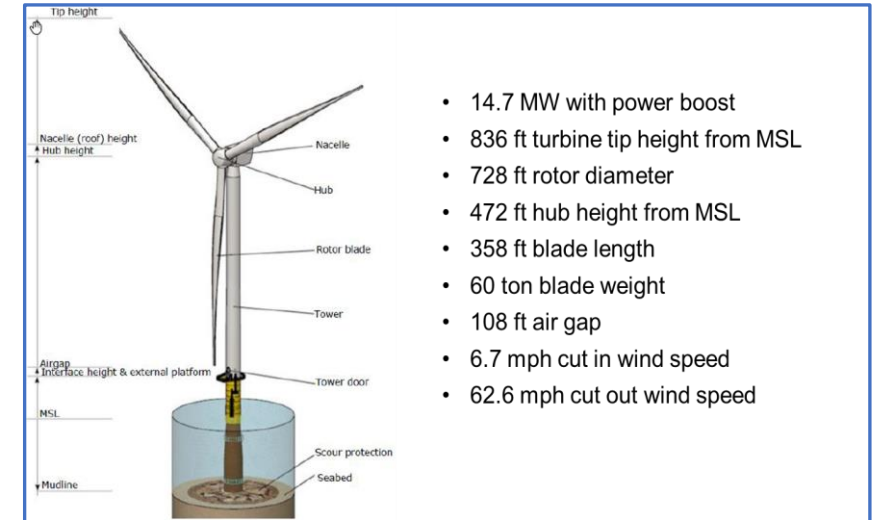


# Constructing CVOW



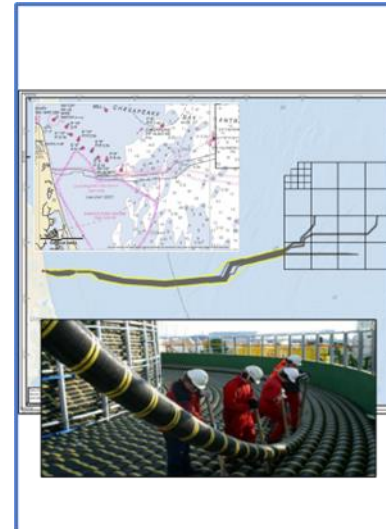
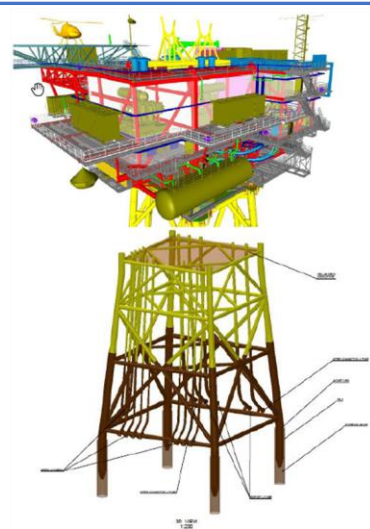
# CVOW Commercial Project

- Largest offshore wind project under development in the United States; 2.6 GW total capacity will power up to 660,000 homes.
- Builds on success of the two-test turbine pilot project
- 176 turbines spaced 1.1 miles (0.93 NM) in the N-S direction, and 0.9 miles (0.75 NM) in the E-W direction
- Scheduled for 2026 completion

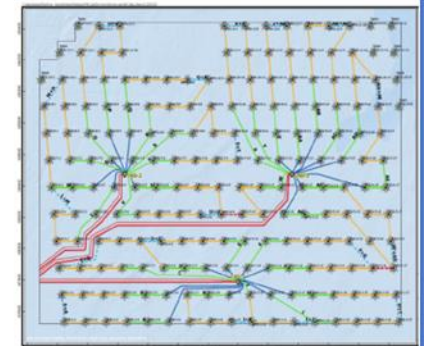


- Topside**
- Length: 178 ft
  - Width: 98 ft
  - Height: 80 ft
  - Target weight: 4,000 tons

- Jacket**
- Seabed level footprint: 98 X 98 ft
  - Topside footprint: 85 X 85 ft
  - Height: 174 ft
  - Weight (without piles): ~3,300 tons
  - Weight (with piles): ~4,400 tons
  - 4-legged jacket with 4 piles



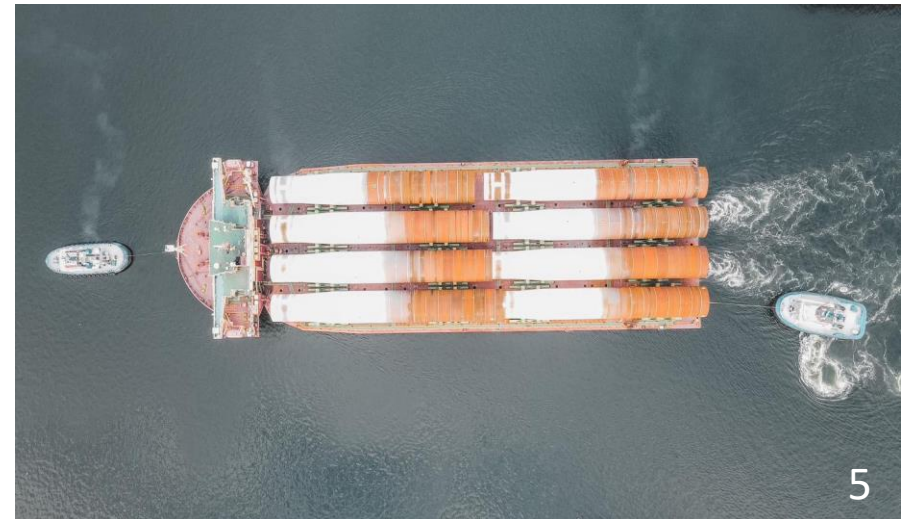
- Inter Array Cable
  - 66kV
  - 274 miles of cable
  - 7.1" diameter cable
- Offshore Export Cable
  - Nine 230 kV export cables
  - 417 miles of cable
  - 11.2" diameter cable
  - 3 to 16 ft burial depth
- Offshore Sub-Station
  - 3 x 880 MW substations
  - 66-kV-230-kV step up



**Preliminary Cable Layout**

- 1000 mm<sup>2</sup>
- 630 mm<sup>2</sup>
- 240 mm<sup>2</sup>
- Link/Switch
- Cluster Connector
- Export Cable- 1200 mm<sup>2</sup>

# First Monopile Loadout



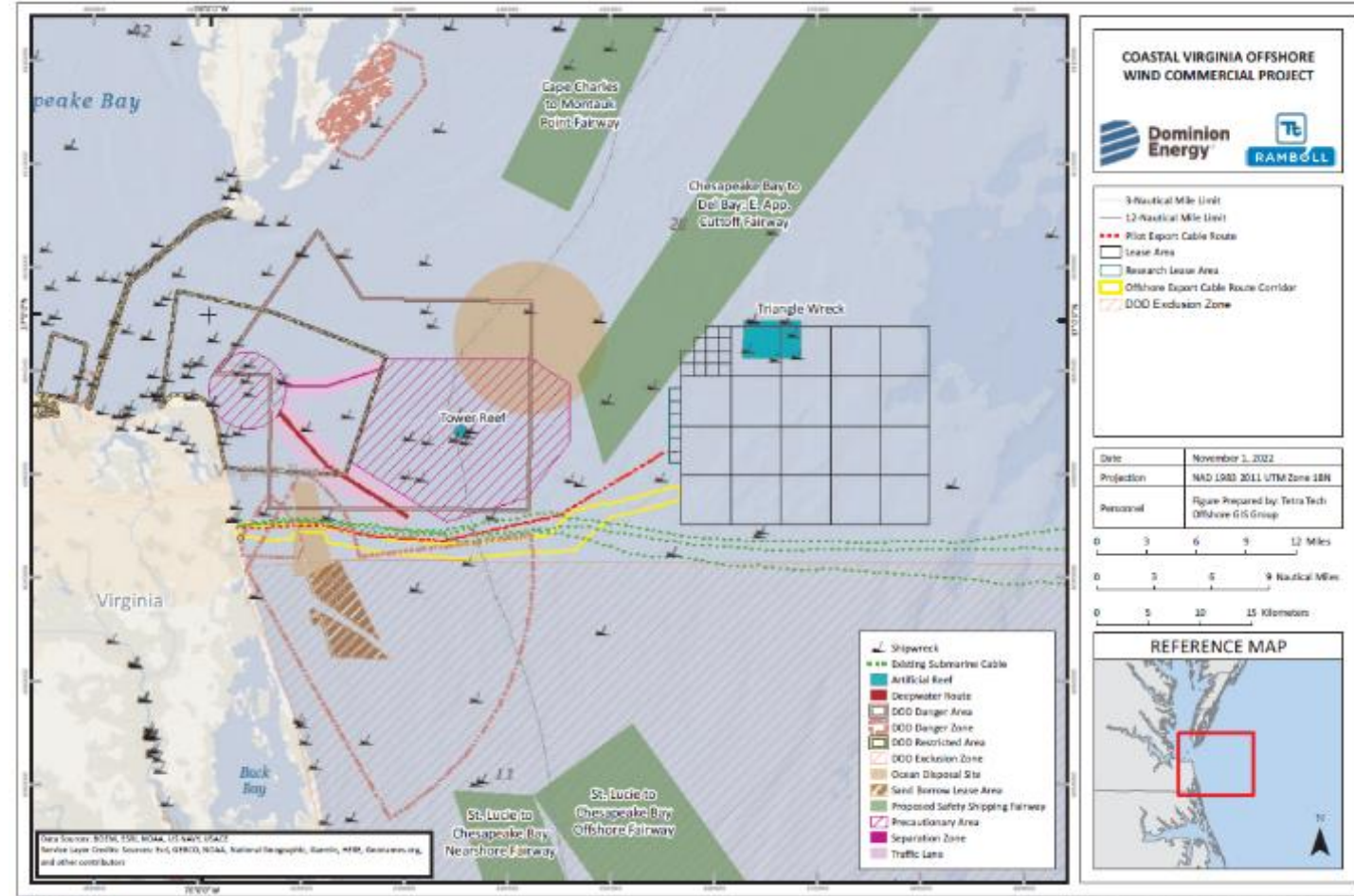
# Export Cables and Offshore Substations

## Export Cables and Route Details

- Nine 230-kV export cables (3 per substation), 417 total miles of cable
- Cables 10.2" in diameter, target ~8' ft burial depth
- Cable corridor minimizes route length and impacts to benthic habitat, DNODS area, sand borrow areas, navigation channels, DoD training and testing areas, and existing subsea cables

## Substations Details

- 3 substations,
- 880 MW each;
- 66-kV to 230-kV step up





## Ongoing Offshore Survey Activities

- UXO survey complete 06-MAY-2023; Target assessment w/ROV in progress, confirmed targets shared with authorities (e.g., NOAA & USCG) and posted in Local Notice to Mariners ([USCG D05 LNM](#))
- UXO disposition Winter/Spring 2024

## Installation Begins Q1 2024

- Start with export cable installation activities and scour protection installation.
- Monopile installation begins following NARW migration period in MAY-2024.
- Ongoing installation activities rotating through lease area, monopile installation restricted from NOV-APR (NARW Migration), other activities continue.

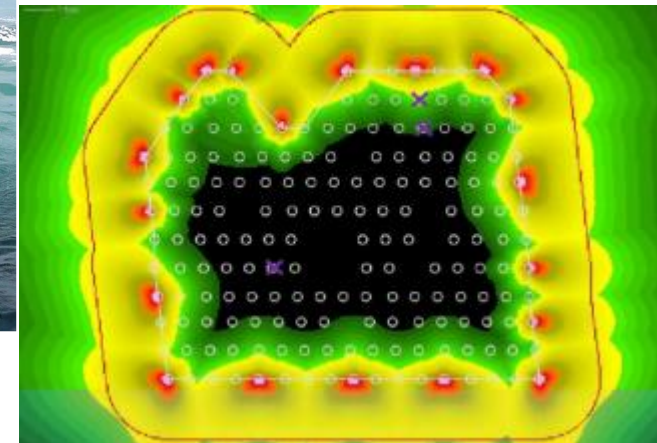
Selected Construction Highlights	
UXO Identification	Complete FEB '24
CVOW Operations Center Construction	May 2023
1 <sup>st</sup> Monopile Delivery	October 2023
Onshore Mobilization	November 2023
First Monopile Installation	May 2024
2024 Monopile Installation Ends	October 2024
2025 Monopile Installation Resumes	May 2025
2025 Monopile Installation Ends	October 2025
2026 Monopile Installation Resumes	May 2026
2026 Monopile Installation Ends	October 2026
CVOW Construction Completed	December 2026

## Lighting and Marking

- Unique alpha numeric identifier on each structure, visible from air and waterline, provides position within the wind farm by row and column
- Structures will be marked with appropriate Navigational Lighting to warn mariners from sunset to sunrise.
- Marine navigation lighting is synchronized across the wind farm by structure type, and range and flash sequence changes as you go further within the wind farm
- Mariner Radio Activated Sound Signal (MRASS)
- Automatic Identification System (AIS); Physical and virtual AIS overlaid along the entire wind farm
- Temporary lighting before Transition Pieces installed

## Marine Coordination Center

- Continuous monitoring project vessels and third-party vessel traffic within wind farm and general area
- Monitor weather conditions and advise on changing weather patterns
- Monitoring and controlling project personnel accessing WTGs
- Communication systems include public address, general alarm, closed circuit television, and local area network (LAN)



# Fishery Resource Assessment Studies

- Partnership with the **Virginia Institute of Marine Science (VIMS)**, resource assessment studies for Black Sea Bass, Channeled Whelk, and Atlantic Surfclam.
- **Black Sea Bass:** Before and After Gradient (BAG) design, 8-strings with 6-ventless traps, 1 sampling event/month, 48-hour soak time w/acoustic buoy release, sites inside lease and control sites area outside lease area; fishermen support with study design and gear configuration; utilize VIMS R/V Bay Eagle.
- **Atlantic Surfclam:** w/Rutgers support, utilize survey dredge and F/V Joey D; study design consistent with previous studies; 20-stations inside lease and 20-station outside (40-sample tows in total); work completed, report being prepared.
- **Channeled Whelk:** Study design agreed, gear acquisition and commercial fishing vessels secured for cooperative support; deploy gear JAN 2024
- **The Nature Conservancy:** Black Sea Bass tagging, monitor movement between turbines and other structure; changes during construction



An aerial photograph of an offshore wind farm in the ocean. Two large wind turbines are visible on the left side of the frame. In the bottom right corner, a white motorboat with a blue canopy is moving across the water. The sky is clear and blue, and the water is a deep blue color.

# Thank you!

## Contact Us:

[CoastalVAWind@dominionenergy.com](mailto:CoastalVAWind@dominionenergy.com)

Mike Lewis

Marine Affairs Manager

[michael.b.lewis@dominionenergy.com](mailto:michael.b.lewis@dominionenergy.com)

Ron Larsen

Fisheries Liaison

[RonLarsen@searisksolutions.com](mailto:RonLarsen@searisksolutions.com)