

Offshore Wind: Footprint on Virginia

*A report detailing offshore wind's geographic
presence in Virginia*



Bob Krout and Eileen Woll
Sierra Club Virginia Chapter | June 2023

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ABOUT THIS REPORT

Offshore wind has not only the obvious footprint offshore with its turbines, substations and export cable located in waters near Virginia's shoreline, but also a large onshore footprint with facilities and infrastructure located nearby to support Virginia's offshore development.

This report details offshore wind's current and pending footprint on Virginia, highlighting offshore wind's physical presence in Virginia with both offshore projects and onshore support including ports, manufacturing facilities, offices, transmission routing, and substations.

The report is a snapshot in time. Virginia's offshore wind footprint will continue to be fast growing and updates to this report will be necessary. It also doesn't cover the physical presence of every entity supporting the industry. For instance, each offshore wind turbine will contain an elevator that could be manufactured and/or installed by a Virginia business. That elevator installer is not included in this report.

There is also a degree of overlap between onshore and offshore activities. Three entities – Dominion Energy, Avangrid Renewables and Siemens Gamesa – have a footprint both offshore and onshore. Dominion and Avangrid have projects under development offshore, as well as facilities (substations, transmission lines, control centers) onshore. Dominion's Coastal Virginia Offshore Wind (CVOW) will site 176 Siemens Gamesa wind turbines 27 to 42 miles offshore, with its blades being finished at their onshore facility on leased land at the Portsmouth Marine Terminal.

Finally, this OSW Footprint report mentions a number of the major suppliers involved with Dominion's CVOW project. While their manufacturing facilities supporting U.S. OSW are primarily based in Europe, many have local office in Virginia and elsewhere in the U.S. and are considering plans to expand their operations in the U.S. Hopefully some of those operations expand to Virginia, which will be included in updates for this OSW Footprint report.

ABOUT THE AUTHORS

Bob Krout is a licensed professional engineer in Virginia and is a LEED (Leadership in Energy & Environmental Design) Accredited Professional. He has over 40 years of facility and plant engineering experience including serving as lead Commissioning Authority on over 85 projects, and lead Energy Auditor for energy and water conservation studies and implementation for over 1,100 facilities encompassing over 35,000,000 square feet. He has also served as mechanical, electrical, plumbing (MEP) design reviewer; controls engineer; power plant engineer, and construction manager. He has significant experience in both conventional power generation and renewable energy.

Since he partially retired in 2018, Bob has maintained his skills through volunteer and part-time work. He has served as a volunteer for the Chesapeake Bay Foundation, including speaking to various groups regarding Bay cleanup efforts, “VOICES” (Graduate Level Bay Science) course completion, and performed monthly water quality sampling and analysis for Long Creek and the Chesapeake Bay for two years. Bob has been a volunteer technical researcher and report writer for the Offshore Wind Group of the Virginia Sierra Club since 2020.

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Eileen Woll is the Offshore Energy Program Director with the Sierra Club Virginia Chapter, where she has worked for over 15 years directing its campaigns to stop offshore drilling and to advance clean energy solutions like offshore wind (OSW). Since 2009, she has led the Virginia Chapter’s OSW campaign, and has been instrumental to many Virginia OSW accomplishments to include standing the nation’s first OSW turbines in federal waters, policy supporting 5200 MW of OSW in Virginia’s public interest, and galvanizing the grassroots support of over 10,000 Virginians for Dominion’s CVOW project. She has considerable experience in strategic campaign planning, special events planning and execution, community-based grassroots outreach, and coalition building. Eileen serves on the state’s Virginia Offshore Wind Development Authority, heading its work on OSW workforce development. She also serves on the Norfolk Mayor’s Climate Change Commission and the Virginia Beach Mayor’s Offshore Wind Commission.

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LAY OF THE LAND OFFSHORE

Numerous stakeholders have been involved with Virginia offshore wind (OSW) development for over a decade. In 2009, the federal Mines, Minerals and Energy – now the Bureau of Ocean Energy Management (BOEM) – held its first stakeholders meeting in Williamsburg. Fast forward to 2021 when Virginia became home to the nation’s first OSW project in federal waters¹. Virginia with Dominion’s CVOW project - scheduled to be online in 2026 - will again set a national record as the largest commercial project in operation.

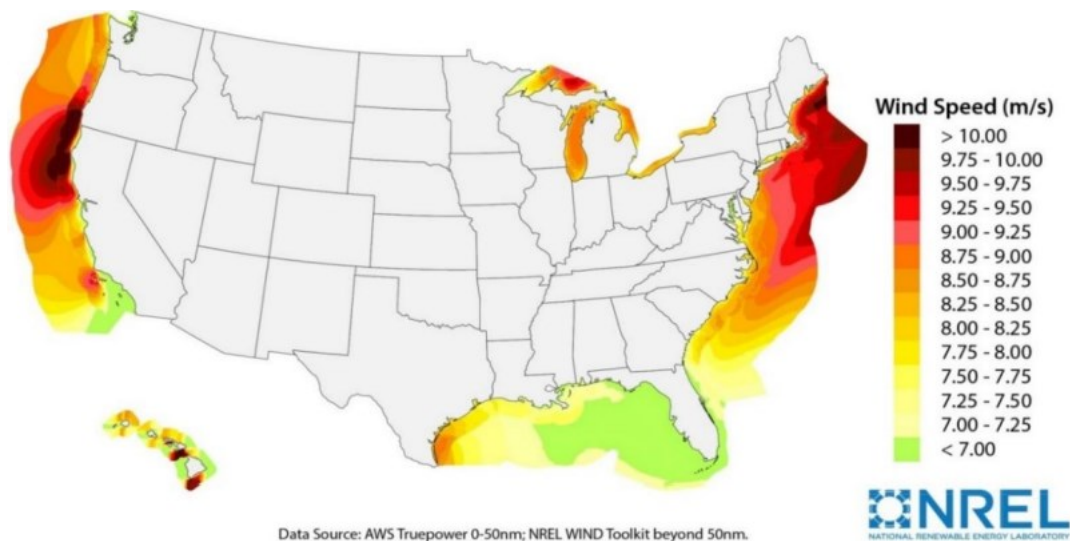
Like many other East Coast states, Virginia is blessed with a wide shallow outer continental shelf (OCS) that extends out about 50 miles off its coast. This enables OSW developers to erect turbines on monopiles foundations that are installed directly into the sea floor.

Beyond the OCS is deeper waters that will require developers to employ floating OSW technologies, whereby turbines are tethered to the sea floor with cables.



[Illustration by Josh Bauer, National Renewable Energy Laboratory \(NREL\)](#)

Also, like other East Coast states, Virginia is blessed with excellent offshore wind resource. ([See NREL resource map below.](#)) This OSW resource is located proximate to large population centers (New York, Washington, DC., etc.) all along the Atlantic, allowing electricity transmission to come from offshore instead of via transmission lines emanating from the Midwest area of the country.



¹ State waters extend out only 3 miles off the coast; from there waters fall under the jurisdiction of the federal government. While Rhode Island’s five turbine project off Block Island was the first U.S. offshore wind project, these turbines were erected in nearby state waters.

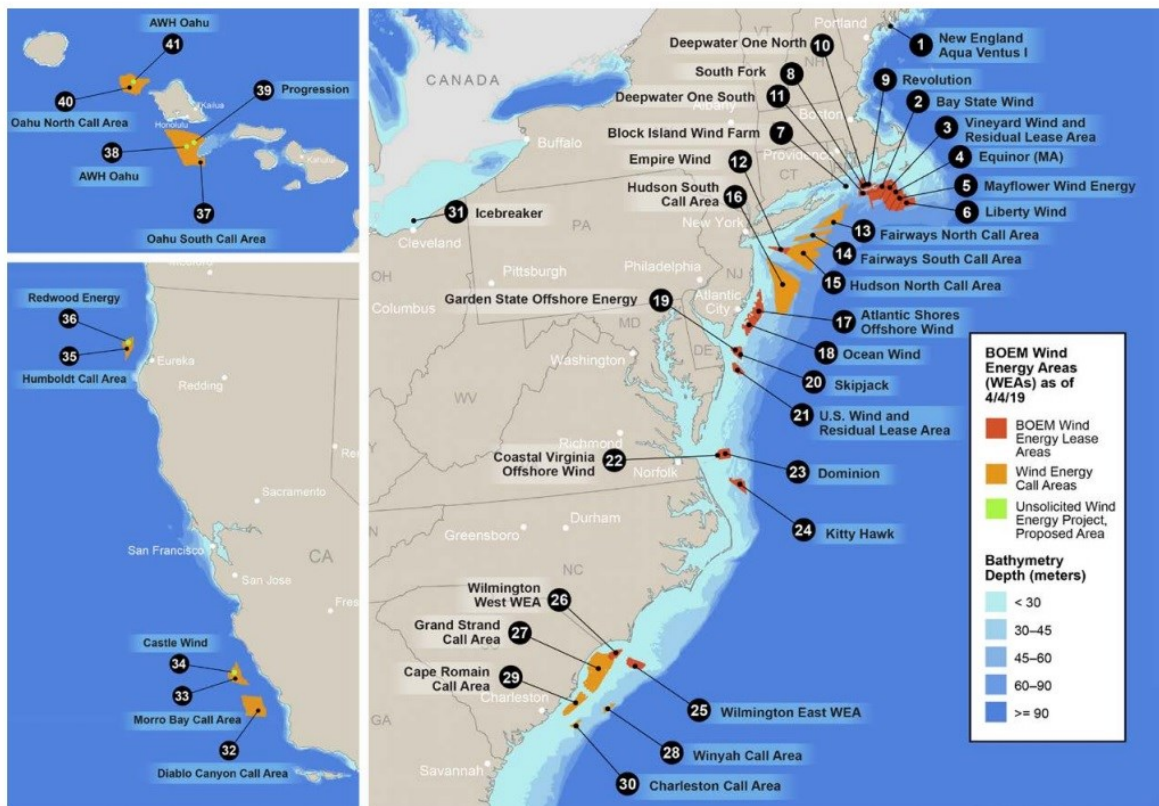
LAY OF THE LAND OFFSHORE

The Biden Administration has mandated development of “30 by 30”, meaning 30 gigawatts (GW) by 2030. With many projects in the pipeline along the Atlantic, OSW lease sales planned for the Gulf and the Pacific coast, including deep water areas requiring floating wind turbines, that mandate will not be difficult to attain.

The Bureau of Ocean Energy Management (BOEM), the federal agency overseeing OSW development, has to-date conducted 11 offshore wind lease auctions and now manages 27 active commercial leases.

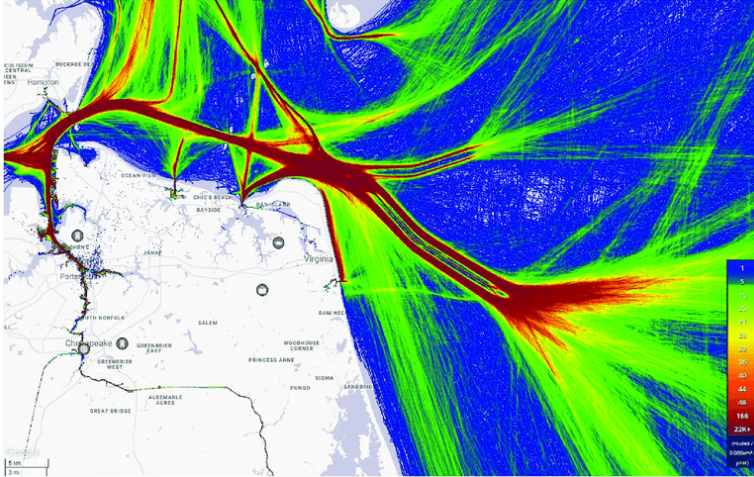
According to a White House fact sheet: “Meeting the 2030 target will catalyze significant supply chain benefits, including new port upgrade investments totaling more than \$500 million; one to two new U.S. factories for each major windfarm component including wind turbine nacelles, blades, towers, foundations, and subsea cables.”

U.S. Offshore Wind Development Activity



Source: US DOE's Wind Technologies Market 2018 report

LAY OF THE LAND OFFSHORE



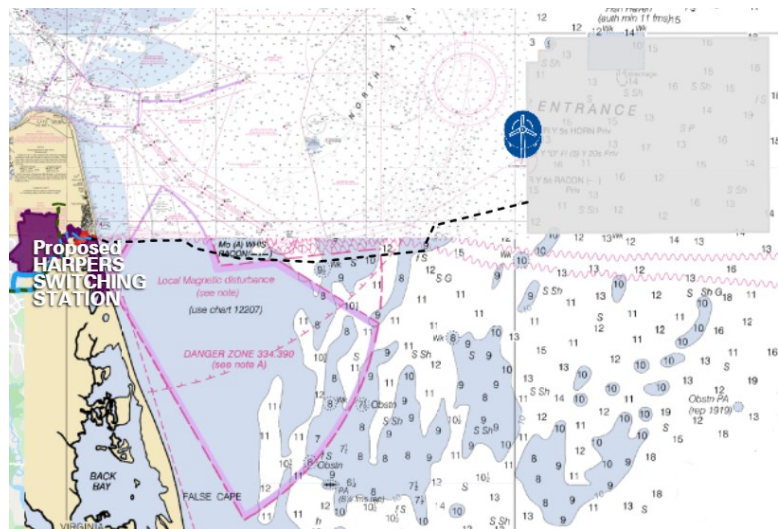
Heat map showing vessel traffic movement in and out of the Chesapeake Bay for the year 2016. Image source: MarineTraffic.com

Offshore in the Atlantic, especially off the coast of Virginia, the ocean is a busy place with multiple users including the Department of Defense, NASA, commercial shipping, fishing, and recreation. Ocean planning is critical in order to mitigate conflicts as each user is very important to Virginia's economy.

OSW must also be responsibly sited to avoid or mitigate its impacts on the marine environment, including birds, bats and especially the endangered North Atlantic Right Whale which annually migrates between Maine and Georgia.

The fishing industry, both commercial and recreational, are large ocean users. The offshore environment also includes historical sites (shipwrecks, etc.) and given Virginia's decades long history of military activities off its coast – there is a lot of unexploded ordnance on the ocean floor that must be dealt with, for both the siting of the turbines but also the laying of cables to the shoreline.

Also, military maintains a large activity area off Virginia's coast. Their activities impact the siting of turbines as well the routing of OSW export cables from the wind energy areas to shore.

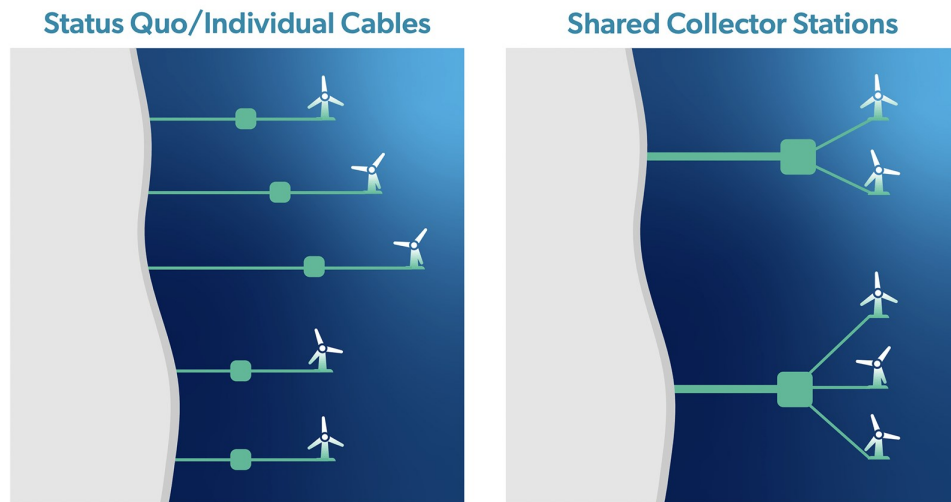


Shown here in purple is the hazard area associated with training and mission operations at [Naval Air Station Oceana's Dam Neck Annex](#) in Virginia Beach.

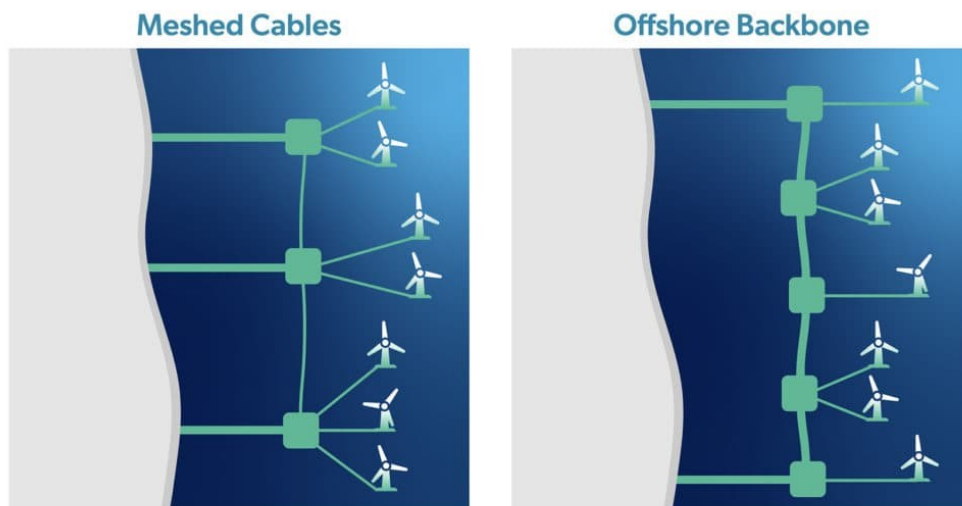
In 2010, Virginia's Coastal Zone Management program helped launch the Mid-Atlantic Regional Council on the Ocean - the first US regional ocean data portal. The [MARCO Portal](#) includes an ocean planning resource center, and the Marine Planner, an Interactive mapping tool with over 6,000 data layers.

LAY OF THE LAND OFFSHORE

According to the Business Network for Offshore Wind, more than 52 GW of proposed offshore wind interconnections were in the queues for the PJM Interconnection, New York ISO and ISO New England as of October 2020. This much power coming onshore will require greater offshore coordination amongst all OSW stakeholders in order to prevent the inefficient, environmentally impactful “spaghetti of cables” splattering the coastline with transmission landings.



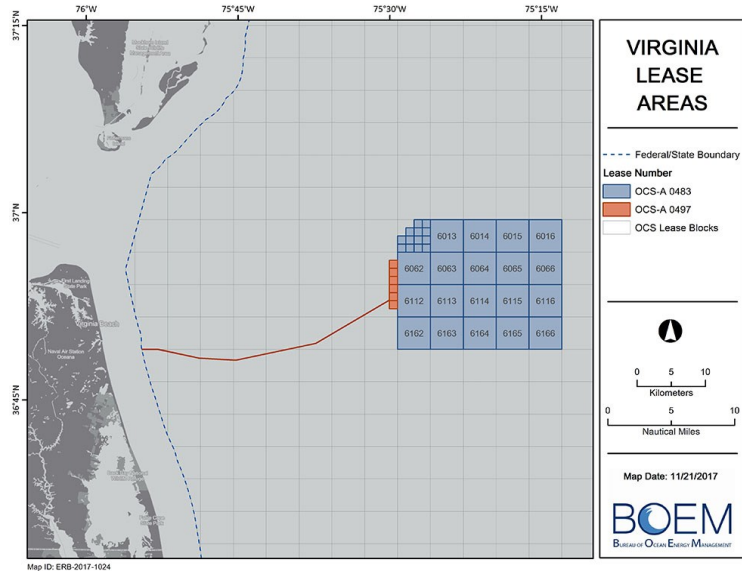
The U.S. Department of Energy is currently considering building an offshore transmission backbone that would coordinate the movement offshore of large volumes of electricity up and down the east coast. Such a “backbone” would help to meet the needs of large load pockets along the Atlantic, leverage existing onshore transmission infrastructure to efficiently deliver OSW, minimize the environmental impacts associated with transmission cable routes and landing points, and a number of other reliability and resiliency concerns.



Images courtesy of the Brattle Group.

CVOW Pilot Project

In March 2015, a research area (shown in red) located 27 miles off the coast of Virginia Beach was leased by the federal Bureau of Ocean Energy Management (BOEM) to the Commonwealth's Department of Mines, Minerals and Energy, now known as Virginia Energy. It was and is still today the first and only OSW research area in the U.S.; said area being available for other renewable energy research activities. The CVOW Pilot project is also the nations first offshore wind project in federal waters.



Virginia Energy designated Dominion Energy as the lease operator and in March 2016 BOEM approved Dominion's Research Activity Plan which involved two 6-megawatt (MW) wind turbines, 27 miles of submarine transmission cable, an interconnection station at Camp Pendleton State Military Reservation in Virginia Beach and other facilities required to support the pilot project.

Dominion partnered with Ørsted to serve as the offshore engineering, procurement and construction lead for the project. The CVOW pilot project became operational in October 2020, delivering power to approximately 3,000 customers.



Pictured here: Governor Ralph Northam, other elected officials and stakeholders broke ground on July 1, 2019 at Camp Pendleton State Military Reservation in Virginia Beach to mark the beginning of onshore construction activities for the CVOW pilot project.

[Photo credit: Dominion Energy](#)

OFFSHORE FOOTPRINT

CVOW's turbines were fabricated by Siemens Gamesa in Europe, foundations and transition pieces were fabricated by EEW in Germany. These components were loaded onto a cargo vessel (the Big Roll) and embarked on a two-week transatlantic journey to Halifax, Nova Scotia, Canada. The parts were then transferred to a jack-up vessel (Vole au Vent) which sailed directly to the offshore CVOW project. The staging and pre-assembly occurred in Halifax due to lack of existence of Jones Act compliant vessels capable of installing the turbines. There was no period of time when the project parts came onshore Virginia.



[Photo credit: Dominion Energy](#)



Photo by Eileen Woll, Sierra Club June 2020

OFFSHORE FOOTPRINT

CVOW Commercial Project

In September 2013, Dominion won a 112,800-acre lease area from BOEM for the larger CVOW Commercial project. Offshore construction is scheduled to begin in 2024, be complete by 2026, and generate 2.6 gigawatts of power.

CVOW consists of 176 Siemens Gamesa 14.7 MW wind turbines standing more than 800 feet tall on EEW monopiles, with transition pieces produced by Bladt Industries. Three offshore substations will collect and bundle the clean energy, undersea export cables will get it ashore, and new onshore transmission infrastructure will deliver the wind power onto the broader electric grid to serve homes and businesses.

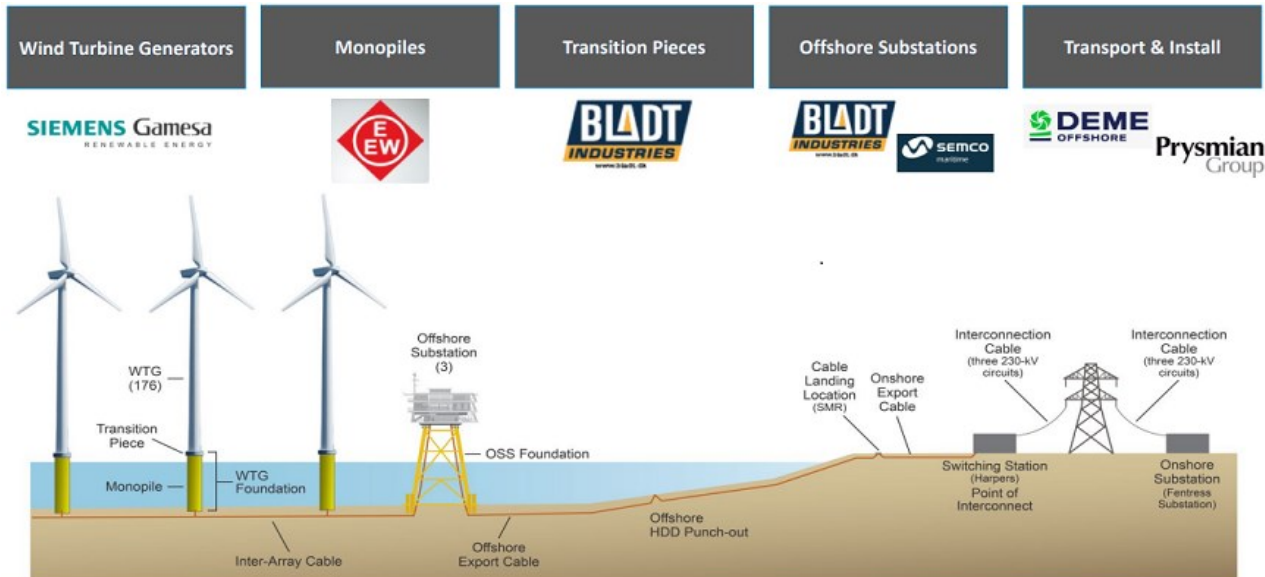
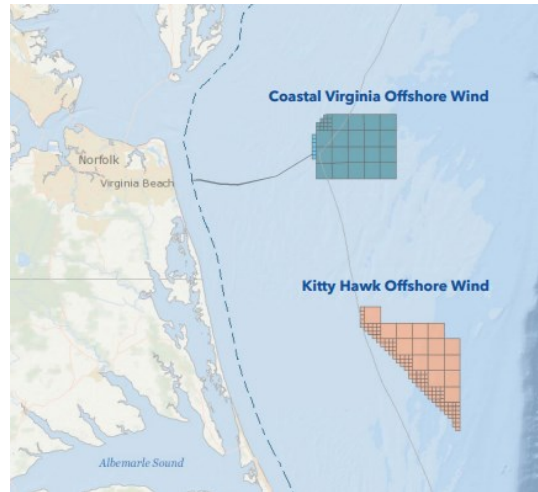


Photo credit: Dominion Energy

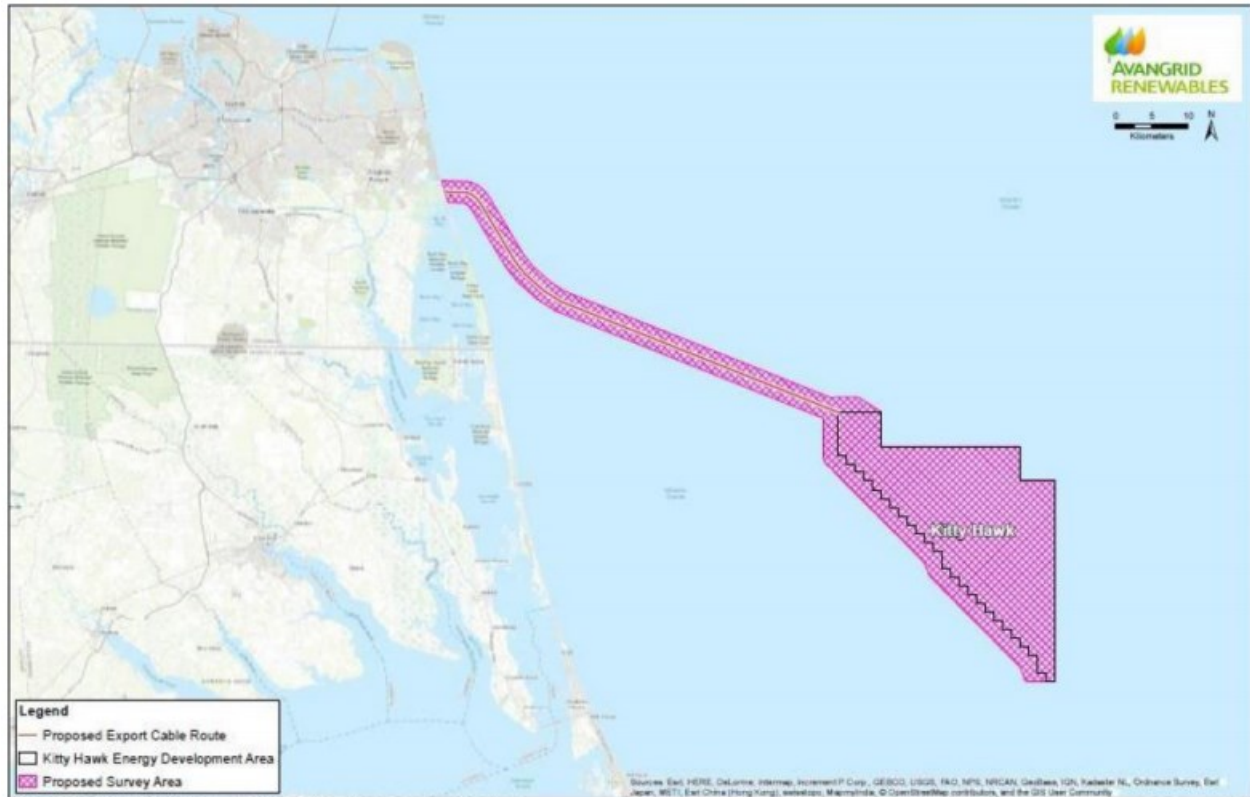
Bladt Industries and Semco Maritime were awarded the contract to supply the three massive offshore substations for CVOW. The inter-array cables will be delivered by Prysmian, along with DEME Offshore.

Substation illustration by Semco Maritime



Avangrid Renewables Kitty Hawk

In 2017, Avangrid Renewables acquired from BOEM a 200 square mile lease area about 27 miles off the Outer Banks area of North Carolina, and about 25 miles south of the Dominion CVOW project. The area has the potential to generate around 3,500 megawatts (MW), enough energy to power approximately 1 million homes. Avangrid plans to bring the power onshore in the Sandbridge area of Virginia Beach.



Avangrid Renewables – a subsidiary of the Spanish company, Iberdrola – is the third largest onshore renewables operator in the U.S. Along with the Kitty Hawk project, they are developing two other East Coast OSW projects, Vineyard Wind II off Massachusetts and Park City Wind off Connecticut.

Central Atlantic Lease Areas

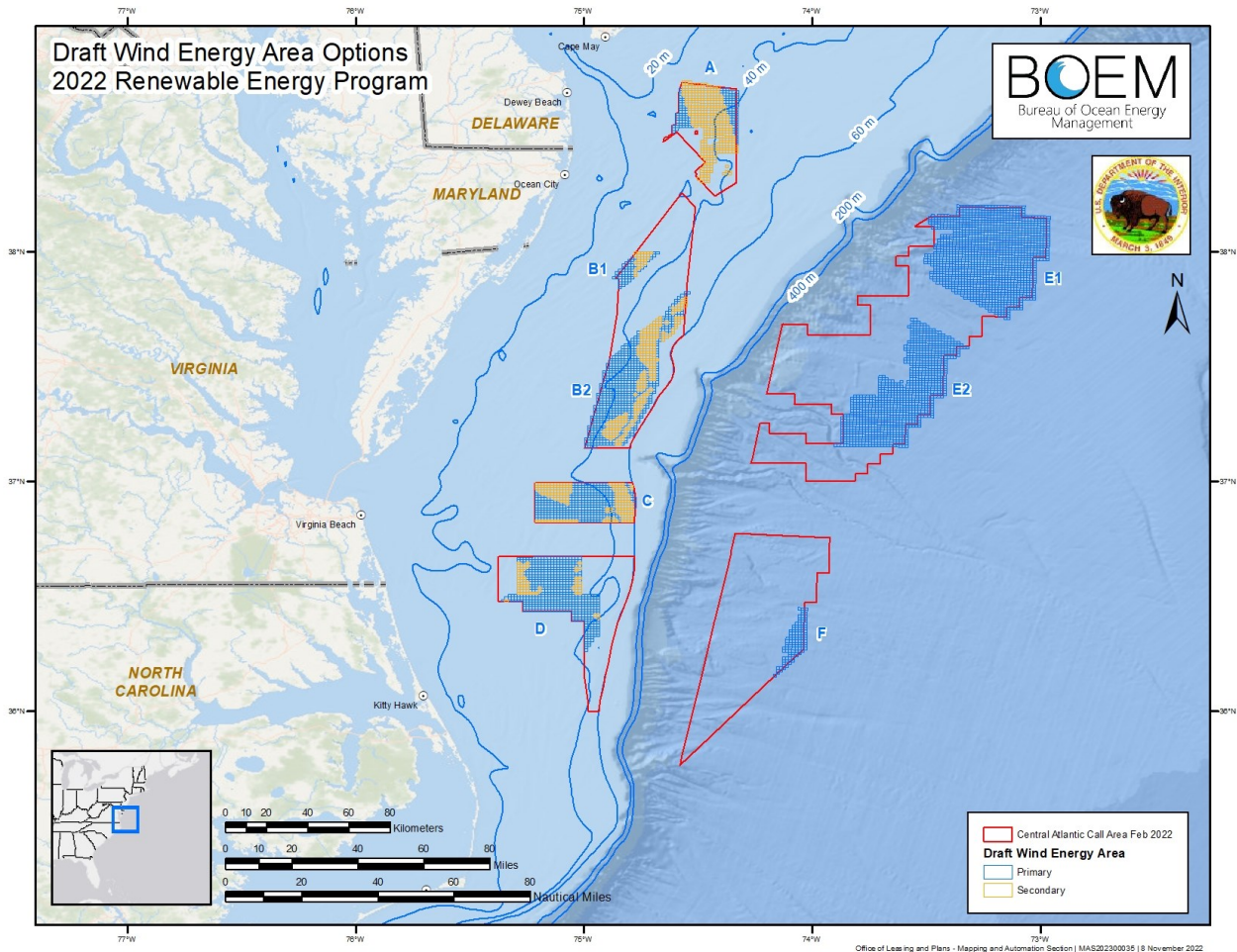
In late 2022, BOEM announced plans for eight draft Wind Energy Areas (WEAs) in the Central Atlantic, specifically in federal waters offshore North Carolina, Virginia, Maryland and Delaware. The lease areas cover approximately 1.7 million acres, with its closest points located 19 miles offshore and most further offshore, up to 77 miles off the Atlantic coast.

Four of the areas are located on the Outer Continental Shelf (OCS—i.e., not deep water areas), with Area C adjacent to Dominion’s CVOW project and Area D located adjacent to Avangrid’s Kitty Hawk project.

OFFSHORE FOOTPRINT

The BOEM leasing process first involves lease area identification, resulting in final identification of areas moving on to the leasing process. The leasing process involves additional environmental assessment and public engagement before offering a proposed sale notice. There is again a public comment period before BOEM offers its final sale notice, which will include an auction date. BOEM is anticipated to hold the Central Atlantic lease sale in early 2024.

Dominion submitted supportive comments encouraging maximizing lease areas in December 2023. If successful in acquiring additional wind energy areas, Dominion would be well positioned to achieve the Virginia's Clean Economy Act's objectives of constructing and operating up to 5200 MW of OSW, determined to be in the public interest.



Ship Building and Sea Transport

While there are three key vessels involved in CVOW’s construction and operations— 1) Wind Turbine Installation Vessel (WTIV), 2) Crew Transfer Vessel (CTV), and 3) Service Operation Vessel (SOV) - in total, there will be over 50 vessels supporting large OSW projects such as CVOW’s construction.

The WTIV will transport to and install wind turbine components, specifically, towers, nacelles and blades the in the OSW lease area. Once at its desired location, it has massive “jacks” which extend down to the ocean floor and lift the ship up to the right height for this work, and keep the ship stable at that position.

The CTV is a fast ship which can get workers out to the site much quicker than other, larger ships. The SOV is a large ship with accommodations for workers to stay out there weeks or months at a time during construction. It has a Motion Compensated Gangway, so OSW technicians and others can walk from ship to the WT platform or ladder without any jostling, and that is extremely important for safety. It is emphasized that all ships that are taking items from a US port to the wind farm must be Jones Act Compliant, which means it is owned, primarily built and flagged in the US.

WTIV “Charybdis”

This roughly \$500 Million ship being built by Dominions Energy’s unregulated Blue Ocean Energy Marine division in Brownsville, Texas has an expected completion date in late 2023, and is already leased to projects in the Northeast at that time.

This will not adversely impact CVOW scheduled completion as Charybdis will be available to support Dominion’s wind turbine installations in 2025 and 2026.



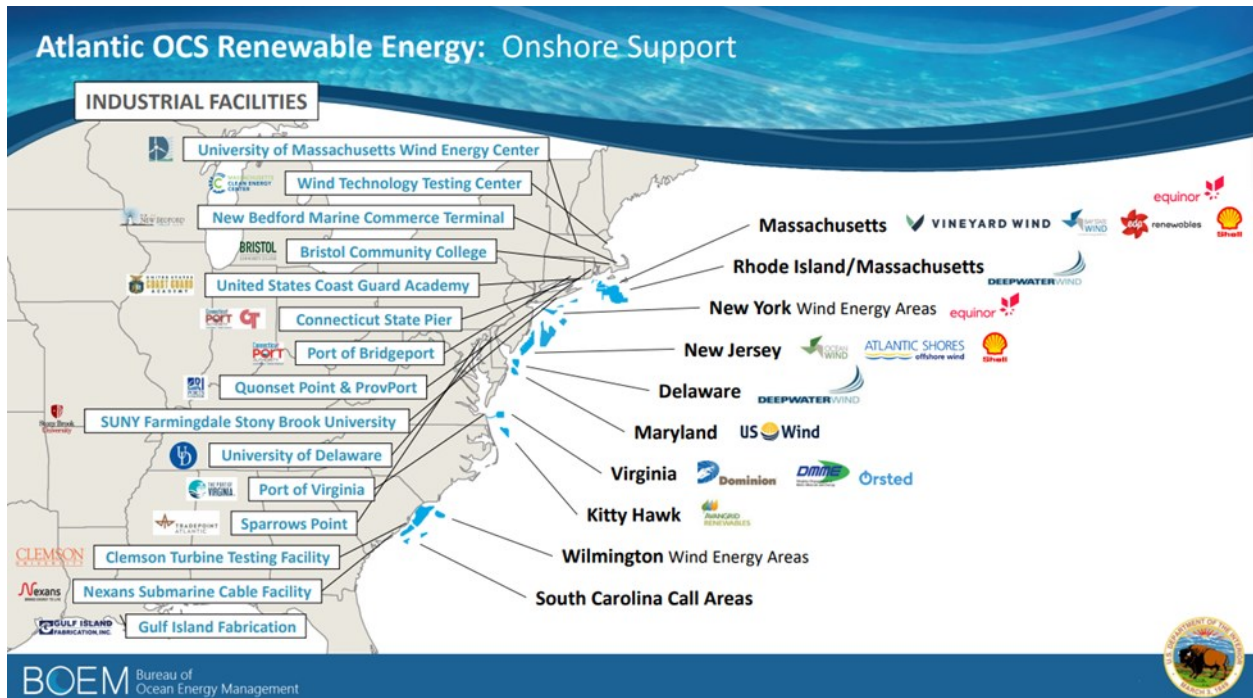
CTV

Atlantic Wind Transfers (AWT) is a company based in Rhode Island. AWT is currently operating the first US flagged CTV, the “Atlantic Pioneer”, which is being used in the Northeast. In late 2019, AWT signed a contract with Chartwell Marine and its Blount Boats division for two US built state of the art CTVs called “Chartwell 24”. In January 2021, Dominion took delivery of one of these ships. This ship can hold 2 to 4 crew plus 24 wind turbine technicians and has a top speed of 29 knots. It should be noted that Dominion Energy currently has a contract with AWT for the “Atlantic Endeavor”, a CTV that supports the operations of the CVOW pilot turbines. The “Atlantic Endeavor” is currently based out of Cobbs Marina in Norfolk, and will ultimately be based out of Dominion’s Operations Base at Fairwinds Landing.

LAY OF THE LAND ONSHORE

Mainly because of the size of OSW component parts that can only be transported by sea, and proximity to the actual OSW projects themselves, East Coast states are establishing onshore hubs to support OSW.

Onshore support involves the manufacturing of any of the 8,000 parts that go into a wind turbine, shoring up ports, availing port side land for assembly and staging of wind turbines, onshore transmission control centers, transmission lines, and construction of new or expansion of existing substations. Also supporting OSW onshore are training centers and administrative offices.



Offshore wind is a mature industry in Europe, where they have 14.6 GW of OSW installed in 2021 and plans to increase that capacity to 150 GW of offshore wind by 2030 and double that to 300 GW by 2050. There are almost 6,000 wind turbines standing offshore 12 European countries, where it is an over \$18 billion industry.

Pictured here is the OSW staging area in Bremerhaven Germany.



LAY OF THE LAND ONSHORE



Pictured here is Siemens Gamesa's wind turbine production facility in Cuxhaven, Germany. The nacelles for the CVOW project will be manufactured here.

Obviously, the wind power generated offshore needs to come onshore and connect to the electric grid, thus involving a tremendous amount of planning and upgrades to our vast transmission infrastructure. Historically, much of the East Coast's electricity has been imported from the Midwest. With OSW's energy coming online from the east and the capability to interconnect near coastal load centers, the reliance on importation of power from the Midwest will be reduced. However, injecting the large amounts of energy generated by up to 30 GW of OSW along Atlantic will require careful planning and infrastructure development to efficiently deliver OSW.

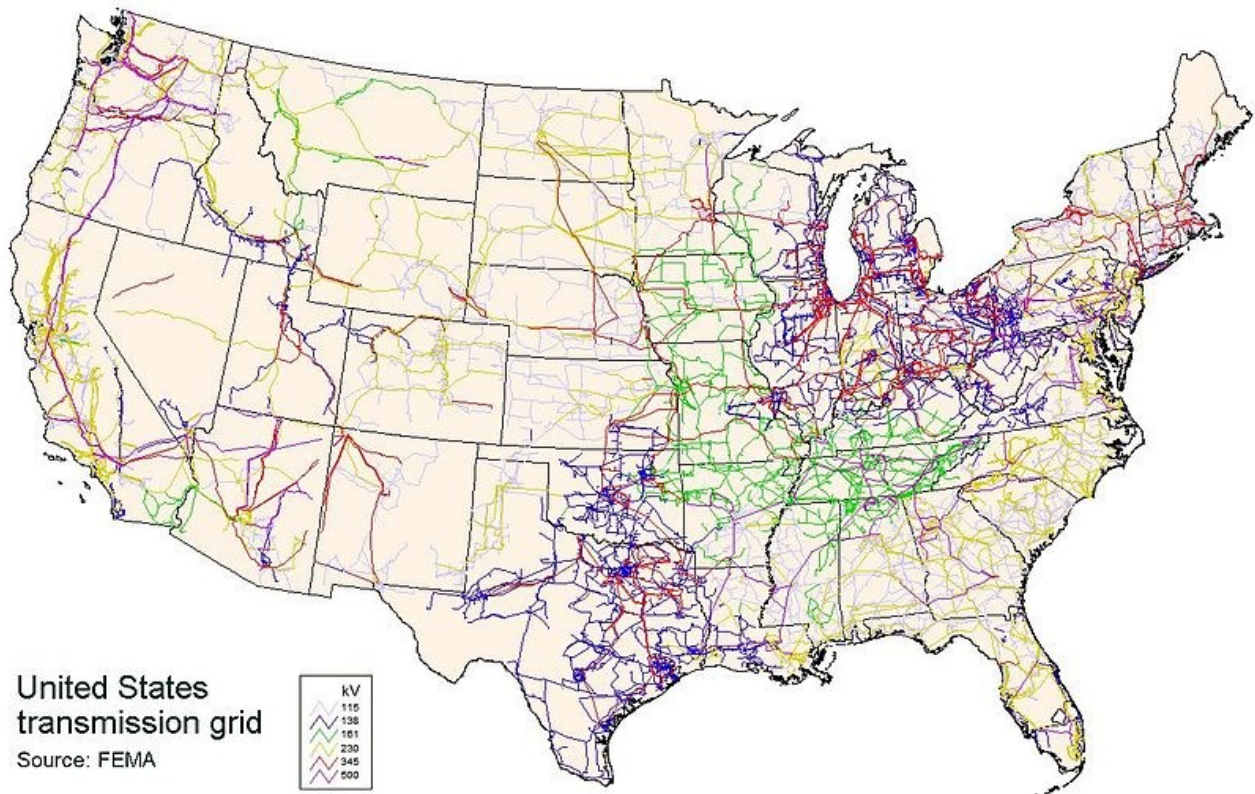


[NASA Dark Sky map](#)

LAY OF THE LAND ONSHORE

There is a tremendous challenge of connecting large amounts of offshore wind to an aging onshore grid that wasn't set up to handle so much power. Thus, integrating offshore wind energy into the U.S. power grid will require costly expansion and upgrades—upwards \$10 billion a year according to the Brattle Group.

PJM has a transmission system that feeds electric power to 51 million people in 13 states, including Virginia. PJM states have collectively targeted 17 GW of offshore wind generation coming online by 2035. Cost estimates to accommodate the upgrades necessary to accommodate this much additional power run between \$2-\$3 billion.



Port of Virginia

The Port of Virginia (POV) is one of the largest cargo ports on the U.S. East Coast, and is a major player in Virginia’s OSW industry. POV has approximately five active terminals in Hampton Roads as well as a river-based port in Richmond and an in-land port in Front Royal, VA.

Massive structural upgrades and dredging, a bridge-tunnel transportation system which do not normally require ships coming and going to POV to slow down, and a very reasonable proximity to the Atlantic Ocean, gives the POV major advantages in supporting the OSW industries. Additional major component construction entities and ancillary support entities will continue to announce new production and support facilities at the POV.



Portsmouth Marine Terminal

In 2022, the Port of Virginia awarded Skanska a \$223 million contract to redevelop approximately 72 acres of the 287-acre Portsmouth Marine Terminal for use as an offshore wind staging port.

According to Virginia Business, Skanska will improve 1,500 feet of an existing 3,540-foot wharf, build three heavy lift berths, a wind-turbine generator delivery berth, a wind-turbine generator loadout berth and the berth for the steel tube monopiles (turbine foundations).



Pictured here from L to R: Chris Gullickson, POV; Garry Harris, Bob Krout and Eileen Woll, Sierra Club OSW team, and Kip Chope, POV, at the Portsmouth Marine Terminal in Aug. 2021

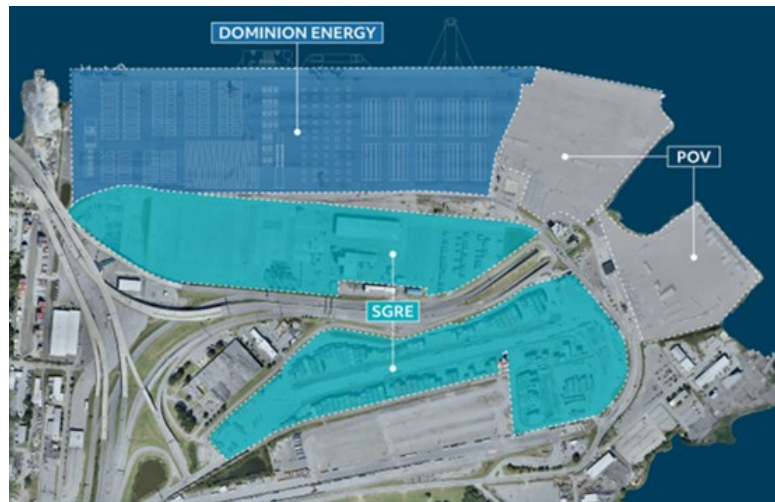
ONSHORE FOOTPRINT

To date, two major OSW industry players - Dominion and Siemens Gamesa— currently have leased land at PMT.

Dominion Energy

Under the agreement with Port of Virginia, Dominion Energy will use 72 acres of the Portsmouth Marine Terminal as a staging and pre-assembly area for the CVOW foundations, transition pieces and turbines.

The lease agreement also includes significant upgrades to ensure the terminal can handle the weight of the large components that will be deployed to build the offshore wind turbines. In a press statement announcing the lease CEO Bob Blue explained Dominion’s rationale for locating at PMT. “It has deep water access, no overhead restrictions, a strong, experienced maritime workforce and sufficient space for these large wind infrastructure components,” Blue said. “It is perfectly situated to serve the Virginia offshore wind project and grow the domestic supply chain needed to complete other offshore wind projects in the United States.”



Siemens Gamesa

In October 2021, Siemens Gamesa Renewable Energy (SGRE) signed a long term lease agreement with POV for an 80-acre site at PMT. SGRE is currently developing a Blade Finishing Facility on their lease area. The facility itself will be approx. 150,000 square feet, with construction starting in 2023, and completed in 2024. This facility will “finish” the turbine blades for the CVOW project which involves sanding, coating, and quality control inspections.



Photo credit: Dominion Energy

SGRE is the overseas manufacturer of the generators (nacelles) and blades for the huge CVOW wind turbines. Dominion selected Siemens Gamesa through a competitive solicitation for OSW turbines in 2020. There is a strong hope that SGRE will eventually add a blade manufacturing facility at the POV.

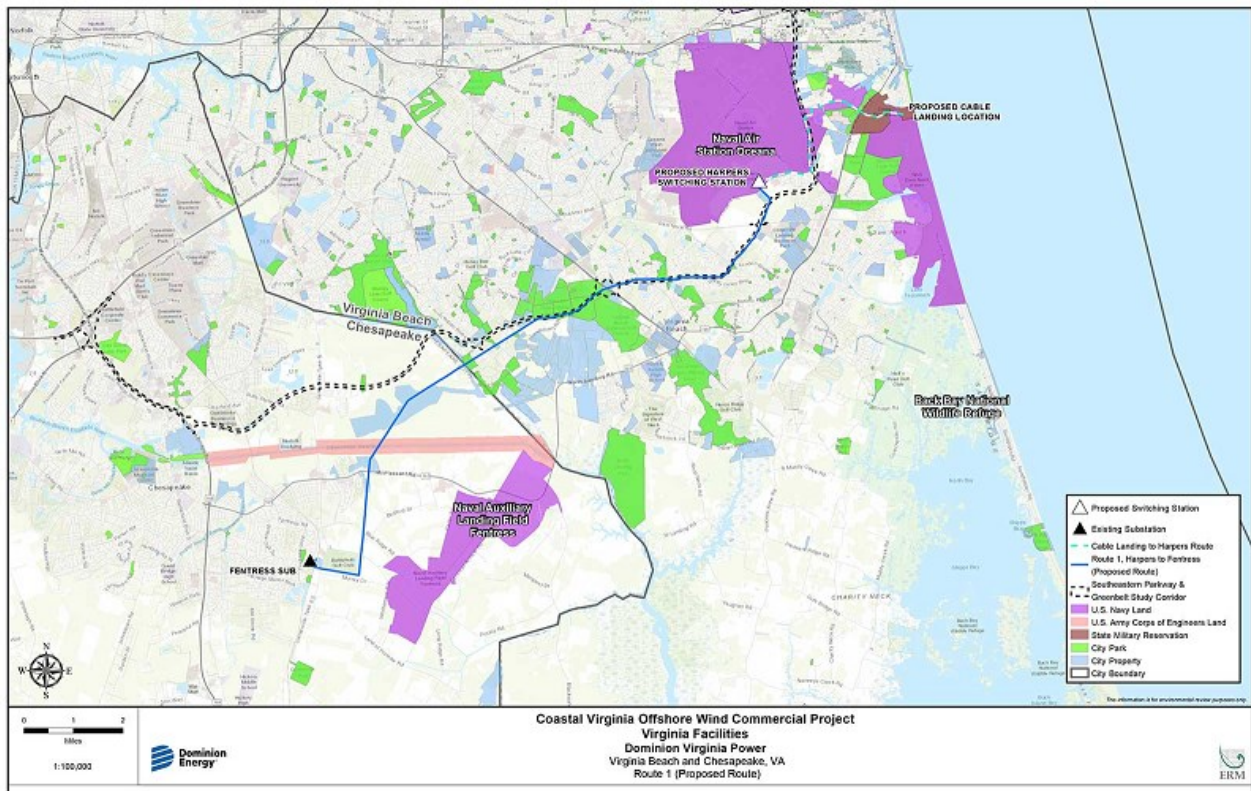
ONSHORE FOOTPRINT

CVOW Transmission

Undersea cables will bring the generated power offshore to the onshore connection at the State Military Reservation, Virginia Army National Guard location in Virginia Beach. The onshore cables then travel underground to Dominion’s Harper’s switching station (near Naval Air Station Oceana).

Dominion identified through a public input process approximately six potential transmission line routes from the Harper’s switching station to the Fentress substation in Chesapeake, Virginia. Fentress has the high voltage lines required for distributing the large amount of power (up to 2,600 MW) to Virginia customers.

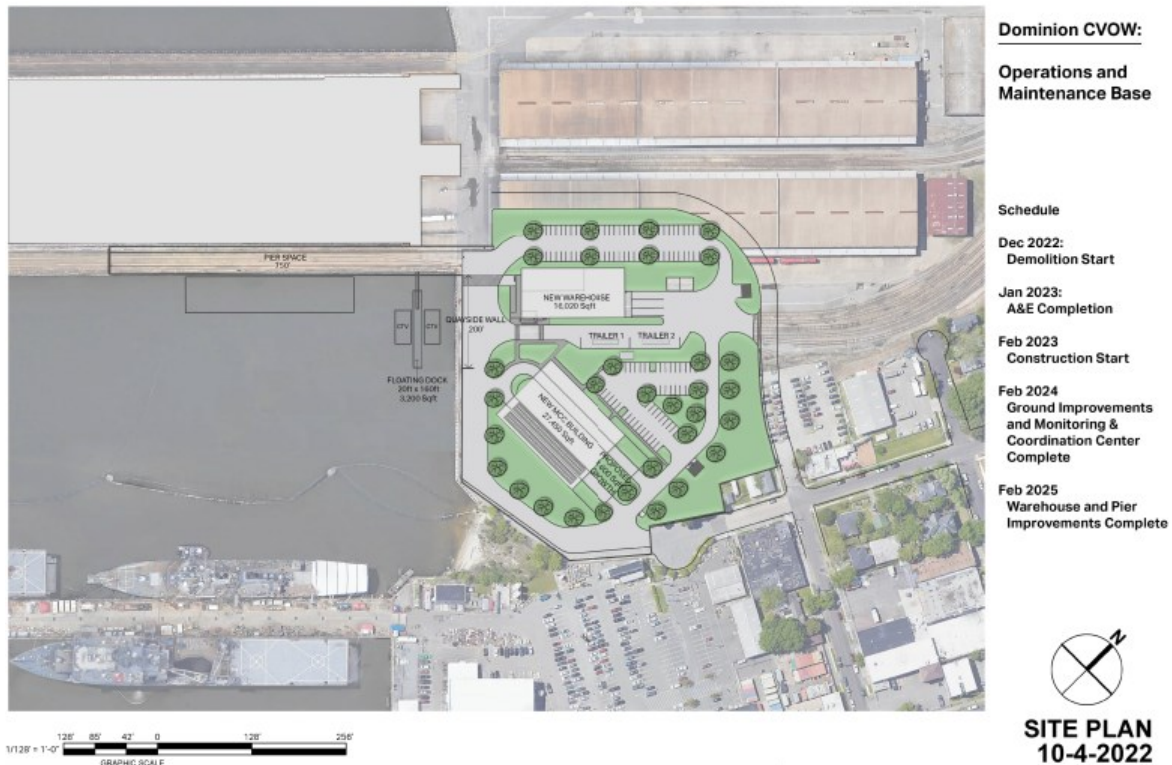
Dominion used a Geo Voice tool to allow the public to visualize each potential route, both before and after the new work, should that route be selected. The preferred route was selected using this robust public input along with environmental studies and cost considerations. The final route chosen was “Route 1”, which is the shortest route, totaling approximately 17 miles, and takes advantage of the existing transmission right of way. 92 percent of this route is located within the undeveloped and former Southeastern Parkway and Greenbelt roadway study corridor or co-located with existing Dominion Energy transmission line corridors. After the initial 4 mile underground portion bringing the power to the Harper’s switching station, the remaining 14 miles of transmission lines to get to Fentress substation will be built using overhead transmission structures.



Fairwinds Landing

Lambert’s Point is owned by Norfolk Southern railroad. It is a terminal area on the Elizabeth River, roughly 4 miles east of the POV’s Norfolk International Terminal (NIT). The Miller Group is a real estate developer based in Virginia Beach. Miller Group signed a 30-year lease for 122 acres at the Norfolk Southern site, and named it “Fairwinds Landing”. Miller Group plans for Fairwinds Landing to support many aspects of the offshore wind supply chain including: 1) manufacturing, fabrication and assembly; 2) construction and storage; 3) staging, 4) maintenance and operations; and 5) maritime logistics and transportation.

Dominion’s Monitoring & Coordination Center

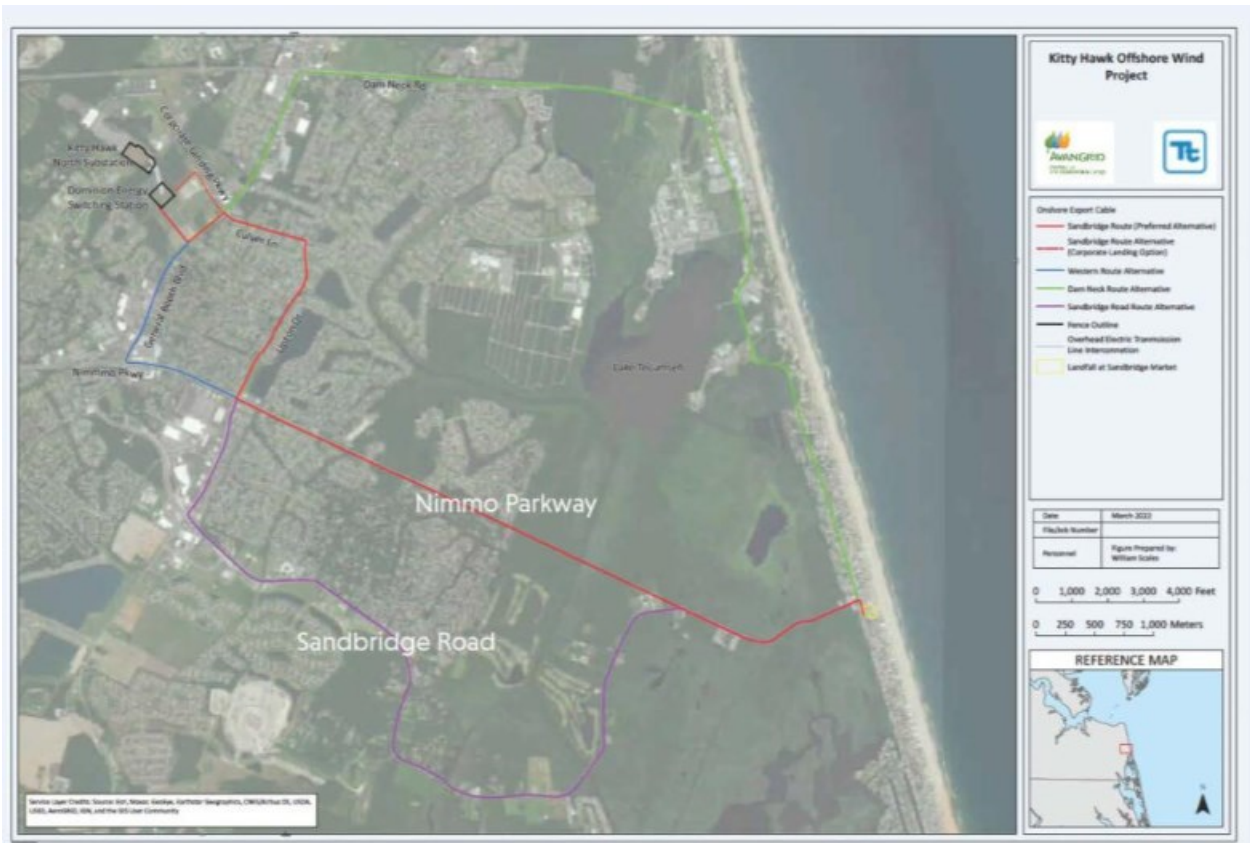


Dominion’s Monitoring & Coordination Center (MCC) at Fairwinds Landing, is referred to as the “Nerve Center” of CVOW. It will be an approximately 30,000 square foot facility with several functions. It will serve as the 24/7 “nerve center” for the wind farm, monitoring turbine performance and allowing operators to make changes in operations, coordination and communications with ships in the CVOW area, etc. It will also be a staging area for some of the wind turbine technicians and workers, who will take supplies from the warehouse and then board a ship for their (typically) 14-day sea deployment to the wind farm. Overall, the facility should see approximately 80 full time employees in and out on a given day, although the analysts are there full time and the offshore workers are transitory. The warehouse is currently planned to be a small warehouse of 17,000 square feet. Both facilities began development in January 2023. Construction will be managed by The Miller Group. Dominion will lease both facilities from Miller Group for the life of the wind farm, with an option to extend the lease past the current estimate of a 20-year life span for CVOW, depending on conditions at the end of 20 years.

ONSHORE FOOTPRINT

Avangrid Kitty Hawk Transmission

Avangrid Renewables, the developer of the Kitty Hawk OSW project, has proposed making landfall for its 3600 MW of OSW in the Sandbridge area of Virginia Beach. Their proposed transmission line will run underground from there along a right-of-way granted for the proposed Nimmo Parkway extension by the City of Virginia Beach to a new transmission station that Avangrid plans to construct on leased land in the Corporate Landing area of Virginia Beach.



OSW Administrative Support

Offshore Wind Landing Office

The Hampton Roads Alliance (HRA) supports economic activity and progress in Hampton Roads, and solidly supports Offshore Wind and the CVOW project. In May 2021, the HRA opened the “Offshore Wind Landing” at 101 W. Main St. in Norfolk; office space where key firms involved in local OSW industry can collaborate. The purpose of the Landing is to develop a cluster of offshore wind companies and foster the growth of Hampton Roads and Virginia as an innovation and supply chain hub of the offshore wind industry. The member list involved in this space is impressive, and includes Dominion, Avangrid, Burns & McDonnell, Nexans, Seaway 7, Seajacks, Xodus, and others.



Training Facilities Supporting OSW

Mid-Atlantic Wind Training Alliance

A training partnership between Centura College, Mid-Atlantic Maritime Academy, and New College Institute was announced in October 2020. The purpose of this alliance is to bring courses and certifications meeting the requirements of the Global Wind Association and the National Center for Construction, Education, and Research to the Hampton Roads area to residents seeking wind turbine technician training in order to perform work on the CVOW OSW project. These three entities are described in more detail below.



Centura College

Centura College has locations in Norfolk, Newport News, Chesapeake and North Chesterfield, VA. Centura’s WT Technician Training program is advertised to result in a diploma in 12 months. It includes WT safety, electrical theory, alternating current/3-phase systems, WT power distribution, and other WT topics.

Sign posted outside Centura College location in Norfolk promotes it wind turbine technician training.

Mid-Atlantic Maritime Academy (MAMA)

MAMA provides US Coast Guard certified training in all areas of ship operations, from cook to machinist to engineer. Currently, a few of the largest employers of MAMA graduates include Norwegian Cruise Lines, Maersk Shipping, and McAllister ship towing.

MAMA is working on ways to provide the required WT technician Safety Training, including the sea safety training. MAMA has a partnership with Centura College on this effort, and is planning to build a sea safety facility in Cheriton, Virginia.

Currently, the sea safety training portion of the GWO wind turbine certification is only offered at the New College Institute in Martinsville, VA—a 3+ hour drive from Hampton Roads, VA.



Rep. Bobby Scott tours MAMA's WT offshore wind simulator.

New College Institute (NCI)



NCI is a division of Virginia Tech located in Martinsville, VA. In addition to WT basic technical training, it currently offers GWO certified WT training in Working at Heights, First Aid, Manual Handling (how to properly handle and move various components), and Fire Awareness.

In spring 2021, Rema McManus (pictured here) was the first graduate of Old Dominion University's newly offered Wind Turbine Technician GWO safety training course. She was able to complete 4 of the 5 safety courses at ODU, but had to travel quite a distance to the New College Institute in Martinsville, Virginia for the week long Sea Safety training module to fully complete the GWO required training.



SIERRA CLUB
VIRGINIA CHAPTER