

BOEM Bureau of Ocean Energy Management

Offshore Renewable Energy Program

Update on Leasing Activities and Project Development June 24, 2021

Brandi Carrier | Offshore Wind and Maritime Industry Knowledge Exchange



• Update on Leasing Activities

Update on Post-Lease Project Development Status





Update on Leasing Activities

Renewable Energy Process: Overview and Pre-Lease Activities



Renewable Energy Process: Focus on Pre-Lease Activities



Renewable Energy Process: Area Identification

BOEM requests (calls) for information to determine competitive interest, shape NEPA considerations, and obtain nominations for possible development within the Planning Area

 Wind Energy Areas (WEAs) are selected for environmental review; these have the potential for further division into Lease Areas

Multiple sales/lease areas can result from a single identified Wind Energy Area

Generally, a winnowing process, but not guaranteed



Future Renewable Energy Leasing: New York Bight

- Call for Information and Nominations published April 11, 2018.
- Nearly 800,000 acres identified as Wind Energy Areas (WEAs) in the New York Bight, between Long Island and the New Jersey coast.
- Now conducting an Environmental Assessment (EA) for potential offshore wind leasing.

Next milestones:

October 2021: Complete EA, publish Final Sale Notice Late 2021 or early 2022: Hold Lease Sale



¹ Megawatts (MW) based upon 3MW/sqkm

² Based upon 350 homes per MW

³ Megawatt hours per year (MWh/yr) Formula = Capacity (MW) * 8760 (hrs/yr) * 0.4 (capacity factor)

Update on Post-Lease Project Development Status

Renewable Energy Process: Overview and Post-Lease Activities





Renewable Energy Process: Focus on Post-Lease Activities





Atlantic OCS Renewable Energy: Projects North to South

Project	Company
Revolution Wind	DEEPWATERWIND
South Fork	DEEPWATER
Sunrise Wind	Orsted EVERS © URCE
Bay State Wind	Bay State Wind Ar detail & Fuendance National
Vineyard Wind I	VINEYARD WIND
Park City Wind	VPARK CITY WIND
Beacon Wind	equinor 👯
Mayflower Wind	A Sel and EPF for evolutions of Visition
Liberty Wind	VINEYARD WIND
Empire Wind	equinor 就
Atlantic Shores	
Ocean Wind	Ørsted
Skipjack Windfarm	
U.S. Wind	US 🍚 Wind
Coastal Virginia Offshore Wind Pilot	Dominion mission Orsted
Coastal Virginia Offshore Wind Commer	cial Dominion
Kitty Hawk	AVANGRID

11

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Renewable Energy Project Status: Rhode Island / Massachusetts

Revolution Wind (OCS-A 0486)

- Lease issued 10/01/2013
- Currently in COP Stage (Submitted 3/13/2020)
- Up to 100, 8- to 12-MW WTGs proposed; total capacity 704 to 880 MW
- Interconnection: Davisville substation, North Kingstown, RI
- PPAs: Rhode Island 400 MW, Connecticut 304 MW Commissioning: 2023



Renewable Energy Project Status: Rhode Island / Massachusetts

South Fork (OCS-A 0517)

- Lease issued 10/01/2013
- Currently in COP Stage (Submitted 6/29/2018)
- Up to 15, 6- to 12-MW WTGs proposed; total capacity 90 to 130 MW

Interconnection: Heather Hills or Beach Lane, NY

- PPAs: New York 130 MW
- Commissioning: 2021-2022



Sunrise (OCS-A 0487)

- Lease issued 10/01/2013
- Currently in COP Stage (Submitted 9/01/2020)
- Up to 122, 15-MW WTGs proposed; total capacity 1300 MW
- Interconnection: Holbrook Substation, NY
- PPAs: New York 880 MW
- Commissioning: 2026



Bay State Wind (OCS-A 0500)

- Lease issued 4/01/2015
- Currently in COP Stage (Submitted 3/19/2019)
- Up to 110, 8- to 15-MW WTGs proposed; total capacity 880 to 1,395 MW

Interconnection: Brayton Point, Somerset, MA

- PPAs: None
- Commissioning: 2022 to 2023



Vineyard Wind I (OCS-A 0501N)

- Lease issued 4/01/2015
- Currently in COP Stage (Submitted 12/01/2017)
- 57 to 100, 8- to 14-MW WTGs proposed; total capacity 800 MW

Interconnection: Covell's Beach, Barnstable, MA

- PPAs: Massachusetts 800 MW
- Commissioning: 2022



Park City Wind (OCS-A 0501S)

- Lease issued 4/01/2015
- Currently in COP Stage (Submitted 7/02/2020)
- Up to 140 WTGs
 - Phase 1: 10-16 MW turbines, 50-81 WTGs
 - Phase 2: 10-19 MW turbines, up to 89 WTGs
 - Interconnection: Barnstable, MA
 - PPAs: Connecticut 804 MW
 - Commissioning: 2022-2025



Beacon Wind (OCS-A 0520)

- Lease issued 4/01/2019
- Currently in SAP Stage
- Total capacity: 1,230 MW (Phase 1)
- Interconnection: New York
- PPAs: New York 1,230 MW
- Next Step: COP anticipated 2021-2022



Mayflower Wind (OCS-A 0521)

- Lease issued 4/01/2019
- Currently in COP Stage (Submitted 12/11/2020)
- Up to 149 WTGs proposed; WTG size and total capacity TBD
- Interconnection: Three possible landfall sites to a switching station near Joint Base Cape Cod (JBCC) in Bourne, MA
- PPAs: Massachusetts 804 MW
- Commissioning: 2027



Liberty Wind (OCS-A 0522)

- Lease issued 4/01/2019
- Currently in SAP Stage
- Next Step: COP anticipated 2021



Renewable Energy Project Status: New York

Empire Wind (OCS-A 0512)

- Lease issued 4/01/2017
- Currently in COP Stage (Submitted 1/10/2020)
- 132 to 240, 10- to 18-MW WTGs proposed; total capacity 1,696 MW
- Interconnection: Gowanus, NY (Phase I), Oceanside NY (Phase II)
- PPAs: New York 816 MW (Phase I) and 1,260 MW (Phase II)

Commissioning: 2024 (Phase I) and 2027 (Phase II)



Renewable Energy Project Status: New Jersey

Atlantic Shores Offshore Wind (OCS-A 0499)

- Lease issued 03/01/2016
- Currently in COP Stage (Submitted 05/26/2021)
- Up to 200 WTGs proposed; WTG size and total capacity TBD
- Interconnections: Two Monmouth (Larrabee Substation) and Atlantic City (Cardiff Substation)
- PPAs: New Jersey 2300 MW
- Commissioning: 2027



Renewable Energy Project Status: New Jersey

Ocean Wind (OCS-A 0498)

- Lease issued 3/01/2016
- Currently in COP Stage (Submitted 8/15/2019)
- Up to 98, 12-MW WTGs proposed; total capacity 1,100 MW
- Interconnections: Up to 3 off NJ (Ocean City, Atlantic City, Barnegat Bay/Oyster Creek)
- PPAs: New Jersey ORED 1,100 MW
- Commissioning: 2024



Renewable Energy Project Status: Delaware

GSOE I, LLC (OCS-A 0482)

- Lease Issued 12/1/2012
- Currently in SAP Stage
- Next Steps: COP anticipated June 2024



Renewable Energy Project Status: Delaware

Skipjack Offshore Energy, LLC (OCS-A 0519)

- Lease segregated from GSOE | 12/20/2016
- Currently in **COP Stage** (Submitted 4/25/2019)
- Up to 16, 8- to 12-MW WTGs proposed
- Interconnection: Bethany, or another Delaware location TBD
- PPAs: Maryland OREC 120 MW
- Commissioning: Late 2025



Renewable Energy Project Status: Maryland

US Wind (OCS-A 0490)

- Lease issued 12/01/2014
- Currently in COP Stage (Submitted 8/10/2020)
- Up to 125, 12-MW WTGs proposed; total capacity 1500 MW
- Interconnection: Millsboro, DE, or the Delmarva Peninsula Substation
- PPAs: Maryland OREC 248 MW
- Commissioning: 2024



Renewable Energy Project Status: Virginia

Coastal Virginia Offshore Wind (Pilot; OCS-A 0497)

- Research Lease issued 04/01/2015
- Currently In Operation (Installed June 2020)
- Two 6-MW turbines on monopile foundations; total capacity 12 MW
 - Interconnection: Camp Pendleton Beach, VA



Renewable Energy Project Status: Virginia

Coastal Virginia Offshore Wind (Commercial; OCS-A 0483)

- Lease issued 11/01/2013
- Currently in **COP Stage** (Submitted 12/17/2020)
- Up to 205, 14-MW WTGs proposed; total capacity 2,640-3,000 MW
 - Interconnection: Substation on Naval Air Station Oceana

PPAs: None; the project is utility-owned Commissioning: 2024-2026



Renewable Energy Project Status: North Carolina

Kitty Hawk (OCS-A 0508)

- Lease issued 11/01/2017
- Currently in COP Stage (Submitted 12/11/2020)
- Up to 60, 14- to 20-MW WTGs proposed; total capacity 800 MW
- Interconnection: (1 of 5) Virginia Beach Substation,Birdneck Substation, Corporate Landing Substation,Landstown Substation, Fentress Substation

PPAs: None

Commissioning: 2024



Atlantic OCS Renewable Energy: Anticipated Commissioning



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Leases in COP Stage

Lease Number	Year	Acres	State	Project(s)	Anticipated Capacity (MW)	Anticipated Commissioning
OCS-A 0483	2013	112,799	VA	Coastal Virginia Offshore Wind-Commercial	2,640-3,000	2024
OCS-A 0486	2013	83,798	RI/MA	Revolution Wind	704-880	2023
OCS-A 0487	2013	109,952	MA	Sunrise Wind	1,300	2026
OCS-A 0490	2014	79,707	MD	US Wind	1,500	2024
OCS-A 0498	2016	160,480	NJ	Ocean Wind	1,100	2024
OCS-A 0499	2016	183,353	NJ	Atlantic Shores	2,300	2027
OCS-A 0500	2015	144,842	MA	Bay State Wind	880-1,395	2022
OCS-A 0501	2015	166,886	MA	Vineyard Wind 1 & Park City Wind	1,604	2022
OCS-A 0508	2017	122,405	NC	Kitty Hawk	800	2024
OCS-A 0512	2017	79,350	NY	Empire Wind	1,696	2024
OCS-A 0517	2013	13,700	RI/MA	South Fork	90-130	2022
OCS-A 0519	2018	26,332	DE	Skipjack Windfarm	120	2025
OCS-A 0521	2018	127,388	MA	Mayflower Wind	804	2027



Leases in SAP Stage

Lease Number	Year	Acres	State	Project(s)	Anticipated Capacity (MW)	Status
OCS-A 0482	2012	70,098	DE	GSOE I	Unknown	SAP
OCS-A 0520	2018	128,811	MA	Beacon Wind	Unknown	SAP
OCS-A 0522	2018	132,370	MA	Liberty Wind	Unknown	SAP



BOEM Atlantic Renewable Energy Program 2021 Outlook

Hold New York Bight Lease Sale

- Environmental review & consultations
- Issue up to eight leases
- Issue Vineyard Wind 1 COP Approval and Conditions
- Hold North Carolina/South Carolina Task Force Meeting on July 21
- **Conduct Environmental and Technical Reviews of COPs**
 - South Fork, Ocean Wind, Revolution Wind, Empire Wind (*in process*)

Coastal Virginia Offshore Wind, Park City Wind, Kitty Hawk, Sunrise Wind, Atlantic Shores, Mayflower Wind (*upcoming*)





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United States Coast Guard



OFFSHORE WIND AND MARITIME INDUSTRY KNOWLEDGE EXCHANGE 2021

PORTS: STRESSORS, CONFLICTS, AND OFFSHORE WIND NEEDS JUNE 24, 2021





COAST GUARD ROLES AND RESPONSIBILITIES

- Mission: to ensure our Nation's maritime safety, security and stewardship.
- Recognized as a Subject Matter Expert (SME) for:
 - maritime safety, maritime security, maritime mobility,
 - -national defense, and
 - protection of the marine environment.
- Member of BOEM's State Renewable Energy Task Forces
- Collaborate on use of Navigation Safety Risk Assessments for evaluating specific projects
- Cooperating agency for NEPA purposes





COAST GUARD OBJECTIVES

- Protect All mariners, Property (wind farm(s)) and the Environment
- Provide **recommendations** and identify **potential impacts** as a Cooperating agency for NEPA purposes to the Lead Agency (LA) (BOEM) on the following areas:
 - Safety of navigation for the entire maritime community,
 - Traditional uses of the particular waterway (MTS, Fishing),
 - Ability to still carry out other Coast Guard missions (SAR, MER, MLE/PWCS)
- "To the extent practicable", reconcile the need for safe access routes with the needs of all other reasonable uses of the area involved, e.g., MTS, wind renewable energy installations, fishing, recreation, tourism, etc. (Mutual Co-Existence)
- Maintain a safe, secure, efficient and resilient Marine Transportation System (MTS)
 - Ensuring a **safe and secure flow** of national defense and commercial vessel traffic is vital to both our Nation's national and economic security





PORT ACCESS ROUTE STUDY (PARS)

- Coast Guard is required (by law) to conduct a PARS before establishing new or adjusting existing Traffic Separation Schemes (TSSs) or fairways.
- Consult / coordinate with Federal, State, and foreign state agencies (as appropriate) and maritime community representatives, environmental groups, and other interested stakeholders.
- Primary purpose of this coordination is, to the extent practicable, to reconcile the need for safe access routes with other reasonable waterway uses.
- PARS (complete or modified) may be used to determine and justify if safety zones, security zones, recommended routes, regulated navigation areas and other routing measures should be created





ATLANTIC COAST PORT ACCESS ROUTE STUDY

- Study conducted study between 2011 2017
- Identified navigation safety corridors along the Atlantic Coast
- Corridors included deep draft routes and coastal tug and barge routes
- Report recommended developing these navigation safety corridors into shipping safety fairways (fairways)





ACPARS – INITIAL FAIRWAYS







SUPPLEMENTAL PARS

- ANPRM also reminded readers that USCG had announced potential studies of port approaches and international entry and departure areas published on March 15, 2019 (84 FR 9541)
- These studies have been announced separately by the respective District conducting the PARS.
- 1) The Areas Offshore Massachusetts and Rhode Island (Docket # USCG 2019 0131) Completed
- 2) Northern New York Bight (Docket # USCG 2020 0278).
- 3) Seacoast Of North Carolina including Offshore Approaches to the Cape Fear River and Beaufort Inlet, NC (Docket # USCG 2020 0093)
- 4) Seacoast of New Jersey including Offshore Approaches to the Delaware Bay, DE (Docket # USCG 2020 0172)
- 5) Approaches to the Chesapeake Bay, VA (Docket # USCG 2019 0862)





First District – Northern New York Bight PARS (NNYBPARS)



The Notice of Study was published on June 29, 2020 (USCG-2020-0278, <u>85 FR 38907</u>). The comment period closed August 28, 2020.

- The Coast Guard hosted two virtual public meetings:
 - Thursday, July 30th,
 - Tuesday, August 11th
- 25 Comments received from Government, Fishing, Offshore Wind, Maritime Transportation System users.
 - Recommended consideration of additional data, studies, and stakeholder outreach in addition to specific routing measures.

A Supplemental Notice of Study was published on April 12, 2021 (USCG-2020-0278, <u>86 FR 18996</u>). The comment period closed May 12, 2021.

• 5 Comments received from Offshore Wind Maritime Transportation System users.

The draft NNYBPARS is anticipated to be published in the Federal Register in June, allowing a 45 day comment period. The Final NNYBPARS is anticipated to be published mid-September 2021.





First District – NNYBPARS Possible Recommendations



D1 NNYBPARS Findings/Recommendations to CG Headquarters:

- Establish the Shipping Safety Fairways along the Atlantic Coast as proposed in the Atlantic Coast Port Access Route Study (ACPARS) Advanced Notice of Proposed Rulemaking (ANPRM) [Docket No. USCG-2011-0351 (85 FR 37034) June 29, 2020].
- Establish a New Jersey to New York Connector Fairway
- Establish a Hudson Canyon to Ambrose Southeastern Fairway from the entrance/exit of Traffic Separation Scheme <u>Off New York:</u> <u>South-eastern approach</u> to a point 5 NM beyond BOEM's <u>current</u> <u>Area Identification location(s)</u>.
- Establish a Hudson Canyon to Ambrose Eastern Fairway that connects to the Hudson Canyon Southeastern Fairway.
- Establish a single Nantucket to Ambrose Fairway, thereby removing the need for separate <u>Nantucket to Ambrose and Ambrose to</u> <u>Nantucket Fairways</u> as currently exist.

Ambrose Anchorage:

• The Coast Guard will continue to inquire regarding the potential establishment of an "Ambrose Anchorage" as discussed in the Approaches to New York notification of inquiry [Docket No. USCG-2020-0620 (86 FR 17090) April 1, 2021].





First District – NNYBPARS



- The draft NNYBPARS includes a Discussion Section, whereby the routing measures within the study area are assessed in accordance with the Marine Planning Guidelines (MPG) contained within <u>COMDINST 16003.2B</u>. The MPG advises a 2 NM setback be incorporated from the parallel outer or seaward boundary of a traffic lane (Assumes 300-400m vessels) & 5 NM from the entry/exit (terminations) of a TSS.
- There are multiple occurrences within the study area where BOEMs Area ID locations deviate from the MPG criteria (in addition to being in location conflict with ANPRM Cape Charles to Montauk Fairway) as follows;
- <u>OCS-A 0512:</u>
 - less than 2 NM from Hudson Canyon to Ambrose Traffic Lane
 - less than 2 NM from Ambrose to Nantucket Traffic Lane
- Hudson North:
 - less than 2 NM from Hudson Canyon to Ambrose Traffic Lane & entrance
 - less than 2 NM from Ambrose to Nantucket Traffic Lane & entrance
- Fairways South:
 - less than 5 NM from Ambrose to Nantucket Traffic Lane entrance
 - Inconsistent with "Avoid creating an obstruction or hazard on both sides of an existing route"





Fifth District – NJ Seacoast and Approach to the Delaware Bay – timeline including data sources and analysis status



- Published Notice on May 5, 2020
- Original comment period closed July 5, 2020
- Public meetings Oct-Nov 2020
- Comment period re-opened through December 4, 2020
- Traffic analysis completed with Vessel Monitoring Data included from NMFS
- Routing proposals shared with stakeholders and favorable feedback received
- Risk analysis underway and due to D5 in the next two weeks
- Final report will incorporate all comments and risk
 analysis models
- Draft report expected July 2021





Fifth District – NJ Seacoast and Approach to the Delaware Bay - recommendations



Security

- Create nearshore connector fairway between Delaware Bay and NY/NJ along the NJ seacoast and move it westward to facilitate current lease boundaries
- Create offshore precautionary areas to notify mariners of converging traffic and mixing of vessel types in the area
- Modify the TSS to facilitate terminus five NM from offshore structures
- Create fairway anchorage offshore for future traffic needs



Fifth District – Approaches to the Chesapeake Bay - timeline



- Published Notice on November 27, 2019, Docket number USCG-2019-0862
- Comment period closed January 27, 2020
- 09 comments received from the public
- Traffic Analysis completed and AIS data reviewed/compiled
- Draft report published June 2021





Fifth District – Approaches to the Chesapeake Bay – recommendations



- Establish connector fairway between offshore fairway and existing TSS
- Expand precautionary area between Commercial Virginia Offshore Wind and TSS
- Modify connector fairways to accommodate routing proposals in Delaware Bay approach
- Modify nearshore fairway along the DELMARVA to facilitate coastwise traffic closer to shore and lessen impact on current offshore lease holders





Fifth District – North Carolina PARS



- Announced in Federal Register March 18, 2020 Docket No. USCG-2020-0093
- Draft traffic analysis complete.
- Goal is to finish by Aug 15, 2021





Eleventh District – PACAREA PARS

- Draft Notice of Study in District Commander's office for review and signature
- NOS will be published in Federal Register by end of June
- PACPARS similar to ACPARS but will include approaches to avoid conducting supplemental PARS.
- D11 Commander (RADM Gautier) has briefed Acting Director Liu on way ahead and scheduling quarterly updates.





Anchorages – Cape Fear River



- NPRM signed and ready for publication
- Awaiting notification to Congress





Anchorages - Del Bay Ent (2) Anchorage Grounds and Fairway Anchorage



- Draft NPRM under revision
- NPRM contains 2 proposed anchorages
- PARS is recommending a fairway anchorage.
- Anticipate inclusion in fairways rulemaking





Anchorages

Ambrose Anchorage Ground/Fairway Anchorage



- NOI published March 22, 2021 (USCG-2020-0620)
- If we label this a fairway anchorage no Congressional notification
- Include in fairway rulemaking?





Emergency Training

- Work with the developer
- Work with BSEE
- Emergency response plans
- Table top exercises
- "Real time" exercises -CVOW
 - -Block Island





Next Steps

- Coast Guard will publish Draft PARS reports in the Federal Register over the next several months soliciting public review and comment.
 - -Chesapeake Bay PARS published
 - -NJ/Del Bay, NNY Bight, NC to follow soon after and nearly simultaneously
 - -Notify and encourage the public to review and comment
 - -District PARS reports are only recommendations
 - -Coast Guard HQ to review all PARS reports... agree/disagree
- Coast Guard HQ to publish an NPRM on fairways to include supplemental PARS recommendations as appropriate.
- Pursue other rulemakings / IMO submissions as appropriate





QUESTIONS



"We Help Mariners Get There"

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CHAMBER OF SHIPPING OF AMERICA

BOEM

Ports: Stressors, Conflicts, and Offshore Wind Needs Sean Kline Director of Maritime Affairs



Our vision is to be recognized as a primary organization representing, owners, operators, and charterers of U.S. and foreign flag vessels, before U.S. and international legislative, regulatory, and administrative entities.

CSA will represent and aggressively pursue the members' interests before US & International regulatory, legislative & administrative entities.

These entities include:

- U.S. Congress
- U.S. Coast Guard
- Customs and Border Protection
- Department of Homeland Security
- Environmental Protection Agency
- State Department
- Department of Justice
- White House
- Bureau of Ocean Energy Management
- International Maritime Organization
- International Labor Organization
- Individual States

Contact:

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Some Commercial Ship Factors

- **Regulatory:**
 - CO2 Emissions
 - **Ballast Water**
 - State and Local Regulations
 - Underwater Noise
 - Biofouling
- Economic/Political Factors: ٠
 - 90% of Global Trade Carried by Ships
 - Fuel Costs ٠
 - Developing nations
 - National Government Changes in Policy
 - Larger Ships
 - Military Operations
- Geographic:
 - Wind Energy Areas
 - Shipping Routes- Arctic, Canal Expansion
 - Oil Rigs ٠
- Other Factors:
 - Whales
 - **Fishing Seasons**
 - Monsoon
 - Hurricanes
 - Pandemic
 - Supply/Support Boat Traffic



OF AMERICA

Oceans Are Getting Louder, Posing Potential Threats to Marine Life - The New York Times

6/17/202

Our mission is to represent members' interests regarding U.S. and International legislative, regulatory, and administrative entities.

SHARE

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- Large ships don't turn on a dime and may be ¼ mile long
- Ships don't have brakes A ship going 10 knots will travel 1 nautical mile in 6 minutes, 4 minutes at 15 knots



Turning circle - Loaded condition with maximum rudder angle half ahead RPM





Critical Points

- Safe and reasonable distance from wind turbines to traffic lanes at least 2 NM
- Regional approach to wind energy areas
- Equally important as the regional approach is the cumulative picture from a ship operations perspective.
- Safety of navigation, lives, the environment and flow of goods and commerce for present and future scenarios must be considered and properly planned.
- Engage and communicate with the shipping industry as well as the ports, pilots, and tug sector early and often.
 - Shipping is a dynamic and adaptable industry



Are we set up for Success?

















Photo Credit: LinkedIn



Conclusion

- 1. Take a regional and, as important, a comprehensive approach to offshore wind.
 - Safe, reasonable distance from wind turbines to traffic lanes (min. 2NM)
 - Oversee the cumulative effect for ships transiting the coast
- 2. Engage the shipping industry and all stakeholders early and often in a meaningful way.
- 3. Commercial ships are adaptable when future shipping trends/trade routes and secondary impacts/shifts from all industries commercial shipping, pilots, ports, tug and barge sector, commercial fishing, etc.
- 4. Let's set each other up for success.....Commercial shipping supports offshore wind when we prioritize the safety of navigation, lives, the environment and flow of goods and commerce.





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