Appendix C: Project Design Envelope and Maximum-Case Scenario

Appendix C. Project Design Envelope and Maximum Case Scenarios

Contents

List of Tables

C.1 Project Design Envelope and Maximum Case Scenarios

US Wind proposes the Project using a project design envelope (PDE) concept. This concept allows US Wind to define and bracket proposed Project characteristics for environmental review and permitting while maintaining a reasonable degree of flexibility for selection and purchase of Project components such as wind turbine generators (WTGs), foundations, export cables, and offshore substation (OSS).[1]

The Bureau of Ocean Energy Management (BOEM) provides US Wind and other lessees with the option to submit Construction and Operations Plans (COPs) using the PDE concept— providing sufficiently detailed information within a reasonable range of parameters to analyze a "maximum-case scenario" within those parameters for each affected environmental resource. BOEM identified and verified that the maximum-case scenario based on the PDE provided by US Wind and analyzed in this Draft Environmental Impact Statement (EIS) could reasonably occur if approved. This approach is intended to provide flexibility for lessees and allow BOEM to analyze environmental impacts in a manner that minimizes the need for subsequent environmental and technical reviews as design changes occur.

This Draft EIS assesses the impacts of the reasonable range of Project designs that are described in the COP by using the maximum-case scenario process. The maximum-case scenario analyzes the aspects of each design parameter that would result in the greatest impact for each physical, biological, and socioeconomic resource. This Draft EIS considers the interrelationship among aspects of the PDE rather than simply viewing each design parameter independently. This Draft EIS also analyzes the planned action impacts of the maximum-case scenario together with other past, present, and reasonably foreseeable future actions.

A summary of US Wind's PDE parameters is provided in Table C-1. Table C-2 details the full range of maximum-case design parameters for the proposed Project and which parameters are relevant to the analysis for each EIS section in Chapter 3, *Affected Environment and Environmental Consequences*.

[1] Additional information and guidance related to the PDE concept can be found here: https://www.boem.gov/DraftDesign-Envelope-Guidance

Table C-1. Proposed action design envelope parameters

Project Parameter Details
General (Layout and Project Size)
• Up to 121 WTGs. • Project phases up to approximately 2 gigawatts (GW) of nameplate capacity. • Target commercial operation date of MarWin is December 2025. • Target commercial operations for Momentum Wind and any future build out of the remaining Lease area is 2026 and 2027.
Wind Turbine Generators (WTGs)
• WTG Size - 14.7 to 18 MW. • Spacing - 0.77 nautical miles (1.43 kilometers) east to west and 1.02 nautical miles (1.89 kilometers) north to south. • Rotor Diameter - 722 to 820 feet (220 to 250 meters). • Hub Height - 456 to 528 feet (139 to 161 meters). • Height Tip of Blade - 817 to 938 ft (249 to 286 meters).
WTG Foundations
• Monopiles: large diameter coated steel tubes driven into the seabed. • Installation using hammered pile driving. • Layers of rock will be used for scour protection around the foundations.
Offshore Substations (OSSs) and Foundations
• Up to four OSSs. • OSS foundations will be monopiles, jackets on piles, or jackets on suction buckets.
Meteorological Tower (Met Tower)
• 328 feet (100 meters) mast on a 3,000 square foot (279 square meters) deck atop a Braced Caisson foundation - includes measurement devices to record winds and waves.
Inter-Array Cables
• 66 kV Alternating Current (AC), 3-core cable. • Maximum Length - 125.6 miles (202.2 kilometers). • Target burial depths - approximately 3.3 to 9.8 feet (1 to 3 meter), not more than 13.1 feet (4 meters). • Installed using towed or self-driving jet plow.

Project Parameter Details
Offshore Export Cables
• Up to four 230 to 275 kV Alternating Current (AC), 3-core cable. • Maximum Length - 142.5 miles (229.3 kilometers). • Target burial depths - approximately 3.3 to 9.8 feet (1 to 3 meters), not more than 13.1 feet (4 meters). • Installed using towed or self-driving jet plow. • Cable crossings or hard bottoms may require additional protection such as mattresses, rock placement, or cable protection systems.
Landfall for the Offshore Export Cable
• Two potential landing locations both in Delaware Seashore State Park parking lots at 3R's Beach and Tower Road. • Landfall cable transitions will be completed via horizontal directional drilling (HDD).
Inshore Export Cable
• Up to four 3-phase 230 to 275 kV Alternating Current (AC) or 12 single-phase Onshore Export Cables. • Maximum Length of Inshore Export Cable - 42.24 miles (68 kilometers). • Traverses Indian River Bay after landfall and connects to onshore substations next to the POI at Indian River Substation. • Inshore export cable installed using barge mounted vertical injector, which fluidizes the sediment. • Multiple barges and moved along the route using a six-point anchor system. • Target burial depths - approximately 3 to 7 feet (1 to 2 meters).
Onshore Facilities
• Expansion of existing Indian River substation. • Three proposed onshore substations in the vicinity of the existing Indian River Substation. Three proposed onshore substations in the vicinity of the existing Indian River Substation. • All onshore cable infrastructure will be buried.
Operations and Maintenance (O&M) Facility
• An O&M Facility is proposed in the Ocean City, Maryland region.

ft = feet; km = kilometer; m = meter; nm = nautical mile; OSS = offshore substation; WTG = wind turbine generator.

Table C-2. Project design envelope maximum-case scenario per resource

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
Wind Facility Capacity	2.2 GW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WIND TURBINES																				
Parameters per Turbine																				
Turbine Size	18 MW	X		X		X	X		X		X		X	X	X		X			
Number of Turbine Positions	121	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	
Minimum lower blade tip height (feet) (relative to MLLW)	118 ft		X		X		X	X		X		X		X	X	X		X		
Maximum upper blade tip height (feet) (relative to MLLW)	938 ft		X		X		X	X		X		X		X	X	X		X		
Hub Height	528 ft		X		X			X		X		X		X	X	X		X		
Top of Nacelle Height	546 ft		X		X			X		X		X		X	X	X		X		

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
Maximum rotor diameter (feet)	820 ft		X		X		X	X		X		X		X	X	X		X		
Tip Clearance	118 ft		X		X			X		X		X		X	X	X		X		
Platform Level/ Interface Level Height for Monopile	75 ft		X		X			X		X		X		X	X	X		X		
Parameters per Turbine Foundation																				
Outer diameter at seabed of main tubular structure (feet)	36 ft			X			X	X			X		X	X			X		X	
Sea surface diameter (feet)	36 ft						X	X		X	X		X	X			X	X		
Scour protection (if required) diameter (yards)	36 yds			X	X		X			X	X		X	X			X		X	

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
Seabed penetration (feet)	164 ft			X			X	X		X	X		X	X			X		X	
Seafloor area displaced per monopile (acres)	0.023 acres			X	X		X	X		X	X		X	X			X		X	
Scour protection (if required) area per monopile (acres)	0.188 acres			X	X		X	X		X	X		X	X			X		X	
Scour protection (if required) layer thickness (feet)	9 ft			X	X		X			X	X		X	X			X		X	
Scour protection (if required) volume per monopile (cubic yards)	2,485 cu yds			X	X		X	X		X	X		X	X			X		X	
Permanent seafloor area affected per monopile – foundation and scour protection (acres)	0.211 acres			X	X		X	X		X	X		X	X			X		X	

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
Pile structure grout volume per monopile (cubic yards)	30 cu yds			X							X		X	X			X		X	
Maximum hammer energy (kilojoules)	4,400 kJ	X	X	X		X				X		X	X			X		X		
Indicative continuous piling duration per turbine (hours)	4 hours	X	X	X		X				X		X	X			X		X		
Maximum Total Impacts for Wind Turbine Foundations																				
Maximum number of turbines	121	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	
Number of Foundations	121			X			X	X			X		X	X			X		X	
Number of Piles Driven/Day within 24 hours	1			X			X	X			X		X	X			X		X	

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
Total permanent seafloor area affected by all WTGs – foundations and scour protection (acres)	2.84 acres			X	X		X	X		X	X		X	X			X		X	
Total scour protection area for all WTGs (acres)	22.70 acres			X	X		X	X		X	X		X	X			X		X	
Total scour protection volume for all WTGs (cubic yards)	300,698 cu yds			X	X		X	X		X	X		X	X			X		X	
Total permanent seafloor area affected by all WTGs - foundation and scour protection (acres)	25.60 acres			X	X		X	X		X	X		X	X			X		X	

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
Total temporary seafloor area affected by vessel anchoring (acres)	14.95 acres	X		X			X	X			X		X	X			X		X	
Total temporary seafloor area affected by jack up vessels (acres)	59.80 acres	X		X			X	X			X		X	X			X		X	
Pile-structure grout volume (cubic yards)	3,420 cu yds																			
OFFSHORE SUBSTATIONS (OSS)																				
Topside OSS		X	X	X	X		X	X		X	X	X	X	X	X	X	X	X	X	
Number of substations	4		X	X	X		X	X	X	X	X	X	X	X			X	X		
Length of topside main structure (feet)	131 ft		X	X	X		X	X		X	X	X	X	X			X	X		

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
Length of topside main structure inclusive of ancillary structures (feet)	131 ft		X		X		X	X		X	X	X	X	X			X	X		
Width of topside main structure inclusive of ancillary structures (feet)	262 ft		X		X		X	X		X	X	X	X	X			X	X		
Total structure height: including ancillary structures (feet) (relative to MLLW)	197 ft		X		X		X	X		X		X		X	X			X		
Bridge links link length (feet)	N/A									X		X		X				X		
OSS Foundations																				
Maximum number of OSSs	4	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
OSS Foundation Type	Monopiles, jackets on piles or suction buckets			X			X	X	X		X		X	X			X		X	
Maximum structure dimension at seafloor (yards)	16.40 yds			X			X	X			X		X	X			X		X	
Maximum structure dimension at sea surface (yards)	16.40 yds				X		X	X			X		X	X			X		X	
Number of piles per OSS (monopile/jacket piled)	2/8		X	X	X		X	X			X	X	X	X			X		X	
Total seafloor area displaced at each OSS monopile foundation (acres)	0.19 acres			X	X		X	X		X	X		X	X			X		X	

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
Total scour (if required) protection area at each OSS monopile foundation (acres)	0.38 acres			X	X		X				X		X	X			X		X	
Total scour (if required) protection volume at each OSS (cubic yards)	38.58 cu yds			X	X		X				X		X	X			X		X	
Total permanent seafloor area affected by all OSS monopile foundations (acres)	1.69 acres			X	X		X	X		X	X		X	X			X		X	
Pile-structure grout volume (cubic yards)	62 cu yds			X							X		X	X			X		X	
Piled Jacket Foundations for OSS																				
Number of legs per foundation	3,4 or 6		X	X	X		X	X			X		X	X			X		X	

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
Number of piles per foundation (4 piles per corner)	Up to 2 piles per leg		X	X	X		X	X			X		X	X			X		X	
Separation of adjacent legs at seafloor (feet)	Approx. 99–148 ft			X			X				X		X	X			X			
Separation of adjacent legs at sea surface (feet)	Approx. 66–99 ft						X						X	X			X			
Height of platform above MLLW (feet)	82 ft							X						X				X		
Jacket leg diameter (feet)	13 ft			X			X	X			X		X	X			X		X	
Pin pile outer diameter at seafloor (feet)	9.80 ft			X			X	X			X		X	X			X		X	
Mud-mat area (square feet)	Approx. 646–1,938 ft^2			X			X	X			X		X	X			X		X	

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
Total seafloor area displaced at each OSS piled jacket foundation (acres)	0.026 acres			X	X		X	X		X	X		X	X			X		X	
Total scour (if required) protection area at each piled jacket foundation (acres)	0.10 acres			X	X		X	X		X	X		X	X			X		X	
Total scour protection volume at each piled jacket (cubic yards)	330 cu yds			X	X		X				X		X	X			X		X	
Total permanent seafloor area affected by all OSS piled jacket foundations (acres)	0.89 acres			X	X		X	X		X	X		X	X			X		X	

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
Pile-structure grout volume (cubic yards)	18.3 cu yds per skirt pile 73.2–219.7 cu yds per jacket			X							X		X	X			X		X	
Embedment depth (below seabed) (feet)	262 ft			X			X	X		X	X		X	X			X			
Maximum hammer energy (kilojoule)	1,500 kJ		X	X	X		X				X		X	X			X		X	
Maximum piling duration per foundation (days)	2 (including time for set up, equipment deployment, piling and verification)	X	X	X		X				X		X	X			X		X		
Indicative continuous piling duration per pile (hours)	3 hrs.	X	X	X		X				X		X	X			X		X		
INTER-ARRAY CABLE																				

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
Cable diameter (inches)	12 in			X				X			X	X	X	X	X		X		X	
Estimated total length of cable (miles)	125.80 mi	X		X			X	X	X	X	X	X	X	X	X		X		X	
Typical voltage (kV)	66 kV			X			X				X	X	X	X			X			
Maximum voltage (kV)	66 kV			X			X				X	X	X	X			X			
Target burial depth (feet) (final burial depth based on CBRA)	13.10 ft			X			X	X		X	X	X	X	X	X		X		X	
Cable separation: typical (feet)	N/A			X			X				X	X	X	X			X			
Offshore Cable disturbance corridor width (feet)	2 ft			X			X	X		X	X	X	X	X	X		X		X	
Total temporary seafloor area affected by installing array cables (acres)	29.98 acres																			

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
Boulder clearance: seafloor disturbance (acres)	None anticipated			X			X	X		X	X		X	X			X		X	
Sand wave clearance: seafloor disturbance (acres)	None anticipated			X			X	X		X	X		X	X			X		X	
Sand wave clearance: material volume (cubic yards)	None anticipated			X			X	X			X		X	X			X		X	
Burial spoil: jetting/plowing/control flow excavation material volume (cubic yards)	None anticipated			X			X				X		X	X			X		X	
Percent of cable requiring protection	10%			X			X				X		X	X			X		X	
Array cable protection area (acres)	29.98 acres			X			X	X		X	X		X	X			X		X	

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
Cable protection volume (cubic yards)	145,900 cu yds			X			X				X		X	X			X		X	
Cable/pipe crossings: pre- and post-lay rock berm area (acres)	0			X			X			X	X		X	X			X		X	
Cable/pipe crossings: pre- and post-lay rock berm volume (cubic yards)	0			X			X				X		X	X			X		X	
OFFSHORE SUBSTATION (OSS) INTERCONNECTOR CABLE																				
Number of substation interconnector cables	4			X			X	X			X	X	X	X	X		X		X	
Estimated total length of cable (miles)	TBD	X		X			X	X	X	X	X	X	X	X	X		X		X	
Cable diameter (inches)	12 in			X			X	X			X	X	X	X			X			
Maximum voltage (kV)	66 kV			X			X				X	X	X	X			X			

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
Target burial depth (feet) (final burial depth dependent on CBRA and coordination with agencies)	No more than 13.1 ft			X			X	X			X	X	X	X	X		X		X	
Cable seafloor disturbance width (feet)	33 ft			X			X	X		X	X	X	X	X	X		X		X	
Maximum Total Impacts for Offshore Substation (OSS) Interconnection Cables																				
Total temporary seafloor area affected by installing array OSS interconnection cables (acres)Total	60 acres			X			X	X		X	X		X	X			X		X	
Seabed disturbed: boulder clearance (acres)	None anticipated			X			X	X		X	X		X	X			X		X	

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
Seafloor disturbed: sand wave clearance (acres)	None anticipated			X			X	X		X	X		X	X			X		X	
Sand wave clearance volume (cubic yards)	None anticipated			X			X	X			X		X	X			X		X	
Burial spoil: jetting/plowing/control flow excavation volume (cubic yards)	None anticipated			X			X				X		X	X			X		X	
Cable protection area (acres)	None anticipated			X			X	X		X	X		X	X			X		X	
Cable protection volume (cubic yards)	None anticipated			X			X	X			X		X	X			X		X	
Percent of cable requiring protection	None anticipated			X			X				X		X	X			X		X	
Cable/pipe crossing-pre- and post-lay rock berm area (acres)	0	X			X			X	X		X	X			X		X			

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
OFFSHORE EXPORT CABLE																				
Offshore export cable diameter (inches)	12 inches			X				X			X		X	X			X		X	
Typical export cable voltage (kV)	275 kV			X			X				X		X	X			X			
Cable seafloor disturbance width per cable (feet)	2 ft			X			X	X		X	X		X	X			X		X	
Target burial depth (feet)	No more than 13.10 ft			X			X	X		X	X		X	X			X		X	
Cable weight in air (kilogram per meter)	180.80 kg/m			X			X				X		X				X		X	
Cable weight in water (kilogram per meter)	153 kg/m			X			X				X		X				X		X	
Maximum Total Impacts for Offshore Export Cables																				

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
Number of cable sections per cable	3			X							X		X	X			X			
Number of cable joints	3 factory joints			X							X		X	X			X			
Offshore cables (#)	4			X			X	X	X		X		X	X			X		X	
Length of offshore export cable route (miles)	35.60 miles	X		X			X	X	X	X	X		X	X	X	X	X		X	
Length of offshore export cable (miles) (4 cables within corridor)	142.50 miles	X		X			X	X		X	X		X	X	X	X	X		X	
Total temporary seafloor area affected by installing offshore export cables (acres)	34 acres			X			X	X		X	X		X	X			X		X	
Boulder clearance: seabed disturbance (acres)	None anticipated			X			X	X		X	X		X	X			X		X	

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
Sand wave clearance: seafloor disturbance (acres)	None anticipated			X			X	X		X	X		X	X			X		X	
Sand wave clearance: material volume (cubic yards)	None anticipated			X			X	X			X		X	X			X		X	
Burial spoil: vertical injection material volume (cubic yards)	None anticipated			X			X				X		X	X			X		X	
Burial spoil: plowing/control flow excavation material volume (cubic yards)	None anticipated			X			X				X		X	X			X		X	
Offshore export cable protection area (acres)	34 acres			X	X		X	X		X	X		X	X			X		X	
Cable protection volume (cubic yards)	219,413 cu yds			X	X		X	X			X		X	X			X		X	

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
Percent of cable requiring protection	10%			X	X		X				X		X	X			X		X	
Cable/pipe crossings: pre- and post-lay rock berm area (acres)	0			X			X			X	X		X	X			X		X	
Cable/pipe crossings: pre- and post-lay rock berm volume (cubic yards)	0			X			X				X		X	X			X		X	
INSHORE EXPORT CABLE IN INDIAN RIVER BAY																				
Inshore cable diameter (inches)	12 inches			X				X			X		X	X			X		X	
Cable seafloor disturbance width per cable (feet)	10 ft			X			X	X		X	X		X	X			X		X	

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
Target burial depth (feet)	7 ft			X			X	X		X	X		X	X			X		X	
Maximum Total Impacts for Indian River Bay Cables																				
Number of cable sections per cable	2			X							X		X	X			X			
Number of cable joints	5			X							X		X	X			X			
Inshore cables #	4 cables			X			X	X			X		X	X			X		X	
Length of inshore export cable route (miles)	10.58 miles	X		X			X	X	X	X	X		X	X	X	X	X		X	
Length of inshore export cable (miles) (4 cables within corridor)	42.32miles	X		X			X	X	X	X	X		X	X	X	X	X		X	

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
Temporary seafloor area disturbance by installing inshore export cables (acres)	168.27 acres			X			X	X		X	X		X	X			X		X	
Temporary seafloor area disturbance by dredging for barge access and HDDs (acres)	230.58 acres			X			X	X		X	X		X	X			X		X	
Total temporary seafloor area affected by installing inshore export cables (acres)	398.85 acres			X			X	X		X	X		X	X			X		X	
Boulder clearance: seabed disturbance (acres)	None anticipated			X			X	X		X	X		X	X			X		X	
Sand wave clearance: seafloor disturbance (acres)	TBD			X			X	X		X	X		X	X			X		X	

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
Sand wave clearance: material volume (cubic yards)	TBD			X			X	X			X		X	X			X		X	
Burial spoil: vertical injection material volume (cubic yards)	TBD			X			X				X		X	X			X		X	
Burial spoil: plowing/control flow excavation material volume (cubic yards)	TBD			X			X				X		X	X			X		X	
Inshore export cable protection area (acres)	10.10 acres			X	X		X	X		X	X		X	X			X		X	
Percent of cable requiring protection	10%			X	X		X				X		X	X			X		X	
Cable/pipe crossings: pre- and post-lay rock berm area (acres)	0			X			X			X	X		X	X			X		X	

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
Cable/pipe crossings: pre- and post-lay rock berm volume (cubic yards)	0			X			X				X		X	X			X		X	
LANDFALL PARAMETERS																				
Landfall transition method	HDD			X		X			X	X		X			X	X		X	X	X
HDD noise (decibels)	TBD		X		X	X			X	X		X				X				
Number of personnel	TBD		X		X	X			X	X		X							X	
Daily vehicle movements (non-heavy goods vehicle [HGV])	TBD	X	X		X	X				X		X						X		
Daily vehicle movements (HGV)	TBD	X	X		X	X				X		X						X		
HDD exit pit depth (feet)	30 ft for Atlantic Ocean, 5 ft for Indian River Bay					X		X				X								

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
HDD exit pit (acres)	TBD					X		X				X							X	X
HDD onshore workspace (acres)	0.69 acres	X	X		X	X		X				X							X	X
Dredging from HDD gravity cells at landfall (acres)	1.19 acres	X		X		X	X	X			X	X	X	X	X	X	X		X	
Dredging from HDD gravity cells at onshore substation (acres)	0.59 acres	X		X		X	X	X			X	X		X	X	X			X	
Transition Joint Bay (TJB) depth (feet)	TBD					X		X				X						X		
TJB area (acres)	0.092 acres for one vault					X		X				X							X	X
TJB workspace (acres)	0.37 acres total		X		X	X		X				X							X	X
ONSHORE EXPORT CABLE PARAMETERS																				

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
Type of cable XLPE, FF Copper, and Aluminum X Diameter of cable (inches)	Single copper or aluminum											X								
Diameter of cable ducts (inches)	24 inches					X		X				X								
Maximum voltage (kV)	275 kV					X						X								
Target burial depth (feet)	TBD					X		X				X								
Construction areas (acres)	TBD		X		X	X		X				X						X	X	X
Length of onshore cable route 1a	16 miles	X	X		X	X		X		X		X						X	X	X
Length of onshore cable route 1b	16 miles	X	X		X	X		X		X		X						X	X	X
Length of onshore cable route 1c	17 miles	X	X		X	X		X		X		X						X	X	X

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
Length of onshore cable route 2	17 miles	X	X		X	X		X		X		X						X	X	X
Cable trenches (#)	Up to 4					X		X				X						X	X	X
Total onshore cables (#)	4 6 possible alternative onshore export cable corridors		X		X	X		X	X			X						X	X	X
Corridor width: permanent (feet)	12.5 feet		X		X	X		X				X						X	X	X
Corridor width: temporary and permanent used for construction (feet)	50 ft		X		X	X		X				X						X	X	X
Corridor area: permanent (acres)	TBD		X		X	X		X				X			X	X		X	X	X

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
Corridor area: temporary and permanent used for construction (acres)	TBD	X	X		X	X		X		X		X			X	X		X	X	X
Number of joint bays and splice vaults/grounding link boxes	1 set of joint bays for each circuit (4 circuits/cable) at every 2,000 ft					X		X				X						X	X	X
Joint bays total area (acres)	TBD		X		X	X		X				X							X	X
Joint bays spoil volume per pit (cubic yards)	TBD					X						X							X	X
Joint bays spoil total volume (cubic yards)	TBD					X						X							X	X
Link bays total area (acres)	TBD		X		X	X		X				X							X	X

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
Link bays spoil volume per pit (cubic yards)	TBD					X						X							X	X
Link bays spoil total volume (cubic yards)	TBD					X						X							X	X
Utility bridge length (feet)	TBD					X		X				X						X		
Utility bridge height and width (feet)	TBD					X		X				X						X		
ONSHORE SUBSTATION PARAMETERS																				
Permanent area disturbed by existing substation expansion (acres)	1.84 acres	X	X		X	X		X	X	X		X			X	X		X	X	X
Permanent area disturbed by proposed substations (acres)	10.30 acres	X	X		X	X		X	X	X		X			X	X		X	X	X

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
Permanent area disturbed by permanent access road (acres)	1.43 acres	X	X		X	X		X	X	X		X			X	X		X	X	X
Total permanent area disturbed at onshore substation (acres)	13.70 acres	X	X		X	X		X	X	X		X			X	X		X	X	X
Temporary area disturbed by construction workspace (acres)	4.02 acres	X	X		X	X		X	X	X		X			X	X		X	X	X
Temporary area disturbed by access road (acres)	0.76 acres	X	X		X	X		X	X	X		X			X	X		X	X	X
Main building length (feet)	672 ft		X		X	X		X		X		X						X		
Main building width (feet)	380 ft		X		X	X		X		X		X						X		

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
Main building area (acres)	5.86 acres		X		X	X		X		X		X							X	X
Main building height (feet)	63 ft		X		X			X		X		X						X		
Maximum secondary building(s) length (feet)	N/A		X		X	X		X		X		X						X		
Maximum secondary building(s) width (feet)	N/A		X		X	X		X		X		X						X		
Secondary building(s) height (feet)	N/A		X		X			X		X		X						X		
Fire-wall height (feet)	N/A		X		X			X		X		X								
Number of lightning masts	2		X		X	X		X		X		X						X		
Lightning protection height (feet)	60 ft		X		X			X		X		X						X		

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
Power mast infrastructure height (feet)	TBD		X		X			X		X		X						X		
Transformer height (feet)	TBD		X		X			X		X		X						X		
High-voltage reactor height (feet)	TBD		X		X			X		X		X						X		
SVC/Statcom height (feet)	TBD		X		X			X		X		X						X		
Harmonic filter height (feet)	TBD		X		X			X		X		X						X		
Bus duct height (feet)	TBD		X		X			X		X		X						X		
Other auxiliary equipment height (feet)	TBD		X		X			X		X		X						X		
VESSEL TRIPS			X	X	X		X				X		X	X	X		X	X	X	

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
Wind Turbine Foundation Installation – Maximum Number of Simultaneous Vessels																				
Scour Protection Vessel	1	X	X	X	X		X				X		X	X	X		X	X	X	
Installation Vessel	1	X	X	X	X		X				X		X	X	X		X	X	X	
Support Vessels	5	X	X	X	X		X				X		X	X	X		X	X	X	
Transport / Feeder Vessels (including tugs)	4	X	X	X	X		X				X		X	X	X		X	X	X	
Wind Turbine Foundation Installation – Maximum Number of Trips per Vessel Type																				
Scour Protection Vessel	10	X	X	X	X		X		X		X		X	X	X		X	X	X	
Installation Vessel	4	X	X	X	X		X		X		X		X	X	X		X	X	X	
Support Vessels	302	X	X	X	X		X		X		X		X	X	X	X	X	X	X	
Transport / Feeder Vessels (including tugs)	67	X	X	X	X		X				X		X	X	X	X	X	X	X	

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
Structure Installation – Maximum Number of Simultaneous Vessels																				
Installation Vessels	1	X	X	X	X		X				X		X	X	X		X	X	X	
Transport / Feeder Vessels	3	X	X	X	X		X				X		X	X	X		X	X	X	
Other Support Vessels	3	X	X	X	X		X				X		X	X	X		X	X	X	
Helicopters	0	X	X		X								X	X	X		X	X		
Structure Installation – Maximum Number of Trips per Vessel Type																				
Installation Vessels	3	X	X	X	X		X		X		X		X	X	X		X	X	X	
Transport / Feeder Vessels	130	X	X	X	X		X		X		X		X	X	X		X	X	X	
Other Support Vessels	1,056	X	X	X	X		X		X		X		X	X	X	X	X	X	X	
Helicopters	0	X	X		X				X				X	X	X		X	X		

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
VESSELS REQUIRED FOR OFFSHORE SUBSTATION INSTALLATION																				
Maximum Design Parameters																				
Primary Installation Vessels	1	X	X	X	X		X		X		X		X	X	X		X		X	
Support Vessels	4	X	X	X	X		X		X		X		X	X	X		X		X	
Transport Vessels	3	X	X	X	X		X		X		X		X	X	X		X		X	
Helicopters per day per major vessel	0	X	X		X				X				X	X	X		X			
Maximum Duration (days)	28	X	X	X	X		X		X		X		X	X	X		X		X	
Maximum Return Trips per Vessel Type																				
Primary Installation Vessels	4	X	X	X	X		X		X		X		X	X	X		X	X	X	
Support Vessels	47	X	X	X	X		X		X		X		X	X	X		X	X	X	

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
Transport Vessels	12	X	X	X	X		X		X		X		X	X	X		X	X	X	
Helicopters per day per major vessel	0	X	X		X				X				X	X	X		X	X		
VESSELS REQUIRED FOR INTER-ARRAY CABLE INSTALLATION																				
Maximum Number of Simultaneous Vessels																				
Main Laying Vessels	1	X	X	X	X		X				X		X	X	X		X	X	X	
Main Burial Vessels	1	X	X	X	X		X				X		X	X	X		X	X	X	
Support Vessels	5	X	X	X	X		X				X		X	X	X		X	X	X	
Helicopters support: construction return trips	0	X	X		X								X	X	X		X	X		
Maximum Number of Return Trips per Vessel Type																				
Main Laying Vessels	12	X	X	X	X		X		X		X		X	X	X		X	X	X	

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
Main Burial Vessels	3	X	X	X	X		X		X		X		X	X	X		X	X	X	
Support Vessels	613	X	X	X	X		X		X		X		X	X	X		X	X	X	
Helicopters support: construction return trips	0	X	X		X				X				X	X	X		X	X		
Duration per cable section (days)	TBD	X	X	X	X		X		X		X		X	X	X		X	X	X	
Total Duration (months)	TBD	X	X	X	X		X		X		X		X	X	X		X	X	X	
VESSELS REQUIRED FOR OFFSHORE EXPORT CABLE INSTALLATION																				
Maximum Design Parameters																				
Main Cable Laying Vessels	1	X	X	X	X		X		X		X		X	X	X		X	X	X	
Main Cable Jointing Vessels	0	X	X	X	X		X		X		X		X	X	X		X	X	X	

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
Main Cable Burial Vessels	1	X	X	X	X		X		X		X		X	X	X		X	X	X	
Support Vessels	5	X	X	X	X		X		X		X		X	X	X		X	X	X	
Helicopter support: construction	0	X	X		X				X				X	X	X		X	X		
Maximum Number of Return Trips per Vessel Type																				
Main Cable Laying Vessels	4	X	X	X	X		X		X		X		X	X	X		X	X	X	
Main Cable Jointing Vessels	0	X	X	X	X		X		X		X		X	X	X		X	X	X	
Main Cable Burial Vessels	3	X	X	X	X		X		X		X		X	X	X		X	X	X	
Support Vessels	73	X	X	X	X		X		X		X		X	X	X		X	X	X	
Helicopter support: construction	0	X	X		X				X	X			X	X	X	X	X	X		

Design Parameter	Maximum Design Parameters	Air Quality	Bats	Benthic Resources	Birds	Coastal Habitat and Fauna	Commercial Fisheries and For-	Cultural Resources	Demographics, Employment, and Economics	Environmental Justice	Finfish, Invertebrates, and Essential Fish Habitat	Land Use and Coastal Infrastructure	Marine Mammals	Navigation and Vessel Traffic	Other Uses	Recreation and Tourism	Sea Turtles	Scenic and Visual Resources	Water Quality	Wetlands
Duration per cable section (days)	TBD	X	X	X	X		X		X		X		X	X	X		X	X	X	
Typical Duration (months)	4	X	X	X	X		X		X		X		X	X	X		X	X	X	
TOTAL CONSTRUCTION AND O&M OFFSHORE SURVEYS OF CABLE ROUTES, FOUNDATIONS, SCOUR PROTECTION AND CABLE BURIAL																				
All Offshore Facilities: Seabed Surveys: for Bathymetry, Cable Burial Depth, Scour during Project lifetime (events)	6 (2 prior to each construction campaign) Assume daily inspections /surveys from May-August each year by 1 CTV		X	X	X		X		X		X		X	X			X	X	X	