APPENDIX E3

Maximum-Case Scenario Estimates for Offshore Wind Projects

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Tables

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INTRODUCTION

Table E3-1 (parts 1–10) provides maximum-case scenario estimates of potential offshore wind project impacts assuming maximum buildout, using the geographic analysis areas in the Revolution Wind Farm (RWF) and Revolution Wind Export Cable (RWEC) project environmental impact statement (EIS) and construction and operations plan–designated numbers for the RWF and RWEC. The Bureau of Ocean Energy Management (BOEM) developed these estimates based on offshore wind demand, as discussed in its 2019 study *National Environmental Policy Act Documentation for Impact-Producing Factors in the Offshore Wind Cumulative Impacts Scenario on the North Atlantic Outer Continental Shelf* (BOEM 2019). Estimates disclosed in the EIS's Chapter 3, No Action analyses were developed by summing acreage or number calculations across all lease areas noted as occurring within, or overlapping, a given geographic analysis area. This likely overestimates some impacts in cases where lease areas only partially overlap analysis areas. However, this approach was used to provide the most conservative estimate of future offshore wind development.

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Table E3-1. Offshore Wind Leasing Activities in the U.S. East Coast: Projects and Assumptions (as of March 17, 2023) (part 1)

Region[1]	Lease/Project/ Lease Remainder[2]	Status[3]	Resource/Projects[4]								Estimated Offshore Construction Time Period[5]	Expected Turbine Size (MW)[6]
			Air	Water	Benthic/ Cultural Resources	Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use	Navigation/ Commercial Fisheries/Other Marine Uses	Visual/ Recreation -Tourism	Environmental Justice	Demographics/ Environmental Justice		
NE	NE Aquaventis	State Project	–	–	–	–	–	–	–	–	2024	11
NE	Block Island	State Project, Built	–	–	–	–	–	–	–	–	Built	6
	Total State Waters Leases		–	–	–	–	–	–	–	–	N/A	N/A
MA/RI	Vineyard Wind 1 part of OCS-A 0501	COP, ROD	–	–	–	–	–	–	–	–	2023	Up to 14
MA/RI	South Fork, OCS-A 0517	COP, ROD	–	–	–	–	–	–	–	–	2023	11
MA/RI	Revolution Wind, OCS #	COP	–	–	–	–	–	–	–	–	2024	–
MA/RI	Sunrise, OCS-A 0487	COP	–	–	–	–	–	–	–	–	2024	11
MA/RI	New England Wind, OCS-A 0534 and portion of OCS-A 0501 (Phase 1 [i.e., Park City Wind])	COP	–	–	–	–	–	–	–	–	2024	13–16
MA/RI	New England Wind, OCS-A 0534 and portion of OCS-A 0501 (Phase 2 [i.e., Commonwealth Wind])	COP	–	–	–	–	–	–	–	–	2025 or later	13–19
MA/RI	South Coast Wind, OCS-A 0521	COP	–	–	–	–	–	–	–	–	2024	14
MA/RI	Beacon Wind, part of OCS-A 0520 (Phase 1)	COP	–	–	–	–	–	–	–	–	2024–2026	13
MA/RI	Beacon Wind, part of OCS-A 0520 (Phase 2)	COP	–	–	–	–	–	–	–	–	2027–2029	13
MA/RI	Vineyard Northeast Wind (OCS-A 0522)	Planning	–	–	–	–	–	–	–	–	By 2030	15
MA/RI	Bay State Wind, part of OCS-A 0500	Planning	–	–	–	–	–	–	–	–	By 2030	12
MA/RI	OCS-A 0500 remainder	Planning	–	–	–	–	–	–	–	–	By 2030	12
MA/RI	OCS-A 0487 remainder	Planning	–	–	–	–	–	–	–	–		12
	Total MA/RI Leases		–	–	–	–	–	–	–	–	N/A	N/A
NY/NJ	Ocean Wind 1, part of OCS-A 0498	COP	–	–	–	–	–	–	–	–	2024–2025	12
NY/NJ	Empire Wind 1, part of OCS-A 0512	COP	–	–	–	–	–	–	–	–	2023–2026	Up to 18
NY/NJ	Empire Wind 2, part of OCS-A 512	COP	–	–	–	–	–	–	–	–	2024–2027	Up to 18
NY/NJ	Atlantic Shores South OCS-A 0499	COP	–	–	–	–	–	–	–	–	2025	15
NY/NJ	Ocean Wind 2, part of OCS-A 0532	Planning	–	–	–	–	–	–	–	–	By 2030, spread over 2026-2030	14
NY/NJ	Atlantic Shores North, OCS-A 0549	Planning	–	–	–	–	–	–	–	–	2026	15
NY/NJ	OW Ocean Winds East LLC, OCS-A 0537	Planning	–	–	–	–	–	–	–	–	By 2030, spread over 2026–2030	>12
NY/NJ	Attentive Energy LLC, OCS-A 0538	Planning	–	–	–	–	–	–	–	–		>12
NY/NJ	Bight Wind Holdings, LLC, OCS-A 0539	Planning	–	–	–	–	–	–	–	–		>12
NY/NJ	Atlantic Shores Offshore Wind Bight, OCS-A 0541	Planning	–	–	–	–	–	–	–	–		>12
NY/NJ	Invenergy Wind Offshore LLC, OCS-A 0542	Planning	–	–	–	–	–	–	–	–		>12
NY/NJ	Vineyard Mid-Atlantic LLC, OCS-A 0544	Planning	–	–	–	–	–	–	–	–		>12
	Total NY/NJ Leases		–	–	–	–	–	–	–	–	N/A	N/A
DE/MD	Skipjack, part of OCS-A 0519	COP	–	–	–	–	–	–	–	–	2024	12
DE/MD	US Wind, part of OCS-A 0490	COP	–	–	–	–	–	–	–	–	2024	Up to 18

Region[1]	Lease/Project/ Lease Remainder[2]	Status[3]	Resource/Projects[4]								Estimated Offshore Construction Time Period[5]	Expected Turbine Size (MW)[6]
			Air	Water	Benthic/ Cultural Resources	Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use	Navigation/ Commercial Fisheries/Other Marine Uses	Visual/ Recreation -Tourism	Environmental Justice	Demographics/ Environmental Justice		
DE/MD	GSOE I, OCS-A 0482	Planning	–	–	–	–	–	–	–	–	By 2030, spread over 2023–2030	12
DE/MD	OCS-A 0519 remainder	Planning	–	–	–	–	–	–	–	–	By 2030	12
–	Total DE/MD Leases		–	–	–	–	–	–	–	–	N/A	N/A
South Atlantic	CVOW, OCS-A 0497	Built	–	–	–	–	–	–	–	–	Built	6
South Atlantic	CVOW-C, OCS-A 0483	COP	–	–	–	–	–	–	–	–	2023	14–16
South Atlantic	Kitty Hawk Wind North, OCS-A 0508	COP	–	–	–	–	–	–	–	–	2027	14–18
South Atlantic	Kitty Hawk Wind South, OCS-A 0508 remainder	COP	–	–	–	–	–	–	–	–	2027–2028	> 20
South Atlantic	TotalEnergies Renewables Wind, LLC OCS-A 0545	Planning	–	–	–	–	–	–	–	–	By 2030	> 12
South Atlantic	Duke Energy Renewables Wind, LLC OCS-A 0546	Planning	–	–	–	–	–	–	–	–	By 2030	> 12
–	Total South Atlantic Leases	–	–	–	–	–	–	–	–	–	N/A	N/A
–	OCS Total:	–	–	–	–	–	–	–	–	–	N/A	N/A

Table E3-1. Offshore Wind Leasing Activities in the U.S. East Coast: Projects and Assumptions (as of March 17, 2023) (part 2)

Region[1]	Lease/Project/ Lease Remainder[2]	Status[3]	Generating Capacity (MW)[7]	COP Total Export Cable Length (statute miles)[8]	Export Cable Corridor Length (statute miles)[9]	Number of Export Cables[10]	ESTIMATED Total Export Cable Length (statute miles)[11]	Offshore Export Cable Footprint (acres)[12]	Offshore Export Cable Installation Tool Disturbance Width (feet)[13]
			Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use	Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses	Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses	Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses	Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses	Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses	Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses
NE	NE Aquaventis	State Project	11	–	–	–	–	N/A	–
NE	Block Island	State Project, Built	30	28	–	–	–	11.61	5
–	Total State Waters Leases	–	41	28	0	0	0	11.61	N/A
MA/RI	Vineyard Wind 1 part of OCS-A 0501	COP, ROD	800	98	–	–	–	11.88	6.5
MA/RI	South Fork, OCS-A 0517	COP, ROD	132	139	–	–	–	3	6.5
MA/RI	Revolution Wind, OCS #	COP	Up to 880	42	–	–	–	5.09	6.5
MA/RI	Sunrise, OCS-A 0487	COP	934	-	104.6	2	209.2	25.36	13
MA/RI	New England Wind, OCS-A 0534 and portion of OCS-A 0501 (Phase 1 [i.e., Park City Wind])	COP	804	125	–	–	–	36	10

Region[1]	Lease/Project/ Lease Remainder[2]	Status[3]	Generating Capacity (MW)[7]	COP Total Export Cable Length (statute miles)[8]	Export Cable Corridor Length (statute miles)[9]	Number of Export Cables[10]	ESTIMATED Total Export Cable Length (statute miles)[11]	Offshore Export Cable Footprint (acres)[12]	Offshore Export Cable Installation Tool Disturbance Width (feet)[13]
			Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use	Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses	Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses	Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses	Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses	Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses	Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses
MA/RI	New England Wind, OCS-A 0534 and portion of OCS-A 0501 (Phase 2 [i.e., Commonwealth Wind])	COP	1,725	226	–	–	–	113	10
MA/RI	South Coast Wind, OCS-A 0521	COP	1,600–2,400	1,184	–	–	–	472	6.5
MA/RI	Beacon Wind, part of OCS-A 0520 (Phase 1)	COP	1,230	202	–	–	–	24.48	6.5
MA/RI	Beacon Wind, part of OCS-A 0520 (Phase 2)	COP	1,100	202	–	–	–	24.48	6.5
MA/RI	Vineyard Northeast Wind (OCS-A 0522)	Planning	2,400	532	–	–	–	128	33
MA/RI	Bay State Wind, part of OCS-A 0500	Planning	1,128	139	–	–	–	16.85	6.5
MA/RI	OCS-A 0500 remainder	Planning	1,392	–	–	–	200	64	7
MA/RI	OCS-A 0487 remainder	Planning		–	–	–	200		7
	Total MA/RI Leases		14,925	2,889	105	2	609	923	N/A
NY/NJ	Ocean Wind 1, part of OCS-A 0498	COP	1,100	175	–	–	–	21.2	7
NY/NJ	Empire Wind 1, part of OCS-A 0512	COP	816	46	–	–	–	5.6	5
NY/NJ	Empire Wind 2, part of OCS-A 512	COP	1,260	30	–	–	–	3.6	5
NY/NJ	Atlantic Shores South OCS-A 0499	COP	1,510+	342	–	–	–	294.1	3.3
NY/NJ	Ocean Wind 2, part of OCS-A 0532	Planning	1,148	-	–	–	200	24.2	7
NY/NJ	Atlantic Shores North, OCS-A 0549	Planning	2,355+	330.6	–	–	-	392.9	3.3
NY/NJ	OW Ocean Winds East LLC, OCS-A 0537	Planning	7,584–11,502	–	–	–	200	24.2	7
NY/NJ	Attentive Energy LLC, OCS-A 0538	Planning		–	–	–	200	24.2	7
NY/NJ	Bight Wind Holdings, LLC, OCS-A 0539	Planning		–	–	–	200	24.2	7
NY/NJ	Atlantic Shores Offshore Wind Bight, OCS-A 0541	Planning		–	–	–	200	24.2	7
NY/NJ	Invenergy Wind Offshore LLC, OCS-A 0542	Planning		–	–	–	200	24.2	7

Region[1]	Lease/Project/ Lease Remainder[2]	Status[3]	Generating Capacity (MW)[7]	COP Total Export Cable Length (statute miles)[8]	Export Cable Corridor Length (statute miles)[9]	Number of Export Cables[10]	ESTIMATED Total Export Cable Length (statute miles)[11]	Offshore Export Cable Footprint (acres)[12]	Offshore Export Cable Installation Tool Disturbance Width (feet)[13]
			Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use	Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses	Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses	Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses	Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses	Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses	Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses
NY/NJ	Vineyard Mid-Atlantic LLC, OCS-A 0544	Planning		–	–	–	200	24.2	7
–	Total NY/NJ Leases	–	19,691	924	0	0	1,400	887	N/A
DE/MD	Skipjack, part of OCS-A 0519	COP	192	–	40	1	40	4.85	6.5
DE/MD	US Wind, part of OCS-A 0490	COP	Up to 2,000	145	–	–	–	114	6.5
DE/MD	GSOE I, OCS-A 0482	Planning	1,128	–	–	–	200	24	6.5
DE/MD	OCS-A 0519 remainder	Planning	1,128	–	–	–	200	24	6.5
–	Total DE/MD Leases		4,448	145	40	1	440	168	N/A
South Atlantic	CVOW, OCS-A 0497	Built	12	27	–	–	–	11	3.3
South Atlantic	CVOW-C, OCS-A 0483	COP	2,500–3,000	417	–	–	–	272	5
South Atlantic	Kitty Hawk Wind North, OCS-A 0508	COP	966–1,242	112	–	–	–	45	30
South Atlantic	Kitty Hawk Wind South, OCS-A 0508 remainder	COP	1,694–2,178	353	–	–	–	141	30
South Atlantic	TotalEnergies Renewables Wind, LLC OCS-A 0545	Planning	785	–	–	–	200	24	6.5
South Atlantic	Duke Energy Renewables Wind, LLC OCS-A 0546	Planning	788	–	–	–	200	24	6.5
–	Total South Atlantic Leases	–	8,005	909	0	0	400	517	N/A
–	OCS Total:	–	47,110	4,895	145	3	2,849	2,507	N/A

Table E3-1. Offshore Wind Leasing Activities in the U.S. East Coast: Projects and Assumptions (as of March 17, 2023) (part 3)

Region[1]	Lease/Project/ Lease Remainder[2]	Status[3]	Inter-array Cable Length (statute miles)[14]	Hub Height (feet)[15]	Rotor Diameter (feet)[16]	Total Height of Turbine (feet)[17]	Turbine Number[18]
			Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses	Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses and Visual/Recreation-Tourism	Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses and Visual/Recreation-Tourism	Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses and Visual/Recreation-Tourism	Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses and Visual/Recreation-Tourism
NE	NE Aquaventis	State Project			450	520	2
NE	Block Island	State Project, Built	2	328	541	659	5
	Total State Waters Leases		2	N/A	N/A	N/A	7

Region[1]	Lease/Project/ Lease Remainder[2]	Status[3]	Inter-array Cable Length (statute miles)[14]	Hub Height (feet)[15]	Rotor Diameter (feet)[16]	Total Height of Turbine (feet)[17]	Turbine Number[18]
			Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses	Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses and Visual/Recreation-Tourism	Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses and Visual/Recreation-Tourism	Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses and Visual/Recreation-Tourism	Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses and Visual/Recreation-Tourism
MA/RI	Vineyard Wind 1 part of OCS-A 0501	COP, ROD	171	451	721	812	62
MA/RI	South Fork, OCS-A 0517	COP, ROD	24	358	543	614	12
MA/RI	Revolution Wind, OCS #	COP	155	377–512	538–722	648–873	100
MA/RI	Sunrise, OCS-A 0487	COP	180	459	656	787	Up to 94 (at 102 potential locations)
MA/RI	New England Wind, OCS-A 0534 and portion of OCS-A 0501 (Phase 1 [i.e., Park City Wind])	COP	139	702	935	1,171	41–62
MA/RI	New England Wind, OCS-A 0534 and portion of OCS-A 0501 (Phase 2 [i.e., Commonwealth Wind])	COP	201	702	935	1,171	64–88
MA/RI	South Coast Wind, OCS-A 0521	COP	497	605	919	1,066	147
MA/RI	Beacon Wind, part of OCS-A 0520 (Phase 1)	COP	187	591	984	1,083	70–94
MA/RI	Beacon Wind, part of OCS-A 0520 (Phase 2)	COP	187	591	984	1,083	70–94
MA/RI	Vineyard Northeast Wind (OCS-A 0522)	Planning	221	787	1,050	1,312	160
MA/RI	Bay State Wind, part of OCS-A 0500	Planning	148	492	722	853	94
MA/RI	OCS-A 0500 remainder	Planning	240	492	722	853	116
MA/RI	OCS-A 0487 remainder	Planning		492	722	853	
	Total MA/RI Leases		2,350	N/A	N/A	N/A	1,123
NY/NJ	Ocean Wind 1, part of OCS-A 0498	COP	190	512	788	906	98
NY/NJ	Empire Wind 1, part of OCS-A 0512	COP	134	525	853	951	57
NY/NJ	Empire Wind 2, part of OCS-A 512	COP	166	525	853	951	90
NY/NJ	Atlantic Shores South OCS-A 0499	COP	273.5	522	919	1,049	105–136
NY/NJ	Ocean Wind 2, part of OCS-A 0532	Planning	173	512	788	906	109
NY/NJ	Atlantic Shores North, OCS-A 0549	Planning	528.1	574.2	919	1,049	157
NY/NJ	OW Ocean Winds East LLC, OCS-A 0537	Planning	120	1,009	1,230	Up to 1,312	80
NY/NJ	Attentive Energy LLC, OCS-A 0538	Planning	120	1,009	1,230	Up to 1,312	100
NY/NJ	Bight Wind Holdings, LLC, OCS-A 0539	Planning	120	1,009	1,230	Up to 1,312	145
NY/NJ	Atlantic Shores Offshore Wind Bight, OCS-A 0541	Planning	120	1,009	1,230	Up to 1,312	93
NY/NJ	Invenergy Wind Offshore LLC, OCS-A 0542	Planning	120	1,009	1,230	Up to 1,312	97
NY/NJ	Vineyard Mid-Atlantic LLC, OCS-A 0544	Planning	120	1,009	1,230	Up to 1,312	102
	Total NY/NJ Leases		2,184	N/A	N/A	N/A	1,264
DE/MD	Skipjack, part of OCS-A 0519	COP	23.7	492	722	822	16
DE/MD	US Wind, part of OCS-A 0490	COP	152	528	820	938	121
DE/MD	GSOE I, OCS-A 0482	Planning	139.12	492	722	853	94
DE/MD	OCS-A 0519 remainder	Planning	139.12	492	722	853	

Region[1]	Lease/Project/ Lease Remainder[2]	Status[3]	Inter-array Cable Length (statute miles)[14]	Hub Height (feet)[15]	Rotor Diameter (feet)[16]	Total Height of Turbine (feet)[17]	Turbine Number[18]
			Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses	Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses and Visual/Recreation-Tourism	Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses and Visual/Recreation-Tourism	Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses and Visual/Recreation-Tourism	Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses and Visual/Recreation-Tourism
	Total DE/MD Leases		454	N/A	N/A	N/A	231
South Atlantic	CVOW, OCS-A 0497	Built	9	364	506	620	2
South Atlantic	CVOW-C, OCS-A 0483	COP	300	446–489	725–761	804–869	205
South Atlantic	Kitty Hawk Wind North, OCS-A 0508	COP	149	574	935	1,042	69
South Atlantic	Kitty Hawk Wind South, OCS-A 0508 remainder	COP	200	574	935	1,042	121
South Atlantic	TotalEnergies Renewables Wind, LLC OCS-A 0545	Planning	179.08	492	722	853	64
South Atlantic	Duke Energy Renewables Wind, LLC OCS-A 0546	Planning	94.72	492	722	853	64
	Total South Atlantic Leases		932	N/A	N/A	N/A	525
	OCS Total:		5,922	N/A	N/A	N/A	3,150

Table E3-1. Offshore Wind Leasing Activities in the U.S. East Coast: Projects and Assumptions (as of March 17, 2023) (part 4)

Region[1]	Lease/Project/ Lease Remainder[2]	Status[3]	ESP/OSS Number[19]	Foundation Number[20]	Total Footprint of Foundations (acres)[21]	Seabed Disturbance Based on Addition of Scour Protection (Foundation+Scour Protection) (acres)[22]	Offshore Export Cable Seabed Disturbance (acres)[23]
			Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses and Visual/Recreation-Tourism	Air and Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses and Visual/Recreation-Tourism	Water and Benthic/Cultural Resources and Navigation/Commercial Fisheries/Other Marine Uses	Benthic/Cultural Resources and Navigation/Commercial Fisheries/Other Marine Uses	Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses
NE	NE Aquaventis	State Project	0	2	N/A	N/A	N/A
NE	Block Island	State Project, Built	0	5	1	6	11.61
	Total State Waters Leases		N/A	7	1	6	11.61
MA/RI	Vineyard Wind 1 part of OCS-A 0501	COP, ROD	1	63	1.3	32.7	69
MA/RI	South Fork, OCS-A 0517	COP, ROD	1	13	1	11	555
MA/RI	Revolution Wind, OCS #	COP	2	102	3	74	1,324
MA/RI	Sunrise, OCS-A 0487	COP	1	Up to 95 (at 103 potential locations)	3.27	97.57	1,185
MA/RI	New England Wind, OCS-A 0534 and portion of OCS-A 0501 (Phase 1 [i.e., Park City Wind])	COP	1–2	42–64	1.1–1.7	74	252
MA/RI	New England Wind, OCS-A 0534 and portion of OCS-A 0501 (Phase 2 [i.e., Commonwealth Wind])	COP	1–3	65–91	2.1–3.0	204	358

Region[1]	Lease/Project/ Lease Remainder[2]	Status[3]	ESP/OSS Number[19]	Foundation Number[20]	Total Footprint of Foundations (acres)[21]	Seabed Disturbance Based on Addition of Scour Protection (Foundation+Scour Protection) (acres)[22]	Offshore Export Cable Seabed Disturbance (acres)[23]
			Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses and Visual/Recreation-Tourism	Air and Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses and Visual/Recreation-Tourism	Water and Benthic/Cultural Resources and Navigation/Commercial Fisheries/Other Marine Uses	Benthic/Cultural Resources and Navigation/Commercial Fisheries/Other Marine Uses	Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses
MA/RI	South Coast Wind, OCS-A 0521	COP	2	149	142	1,697	2,480
MA/RI	Beacon Wind, part of OCS-A 0520 (Phase 1)	COP	1	Up to 95	24	399	159.15
MA/RI	Beacon Wind, part of OCS-A 0520 (Phase 2)	COP	1	Up to 95	24	399	159.15
MA/RI	Vineyard Northeast Wind (OCS-A 0522)	Planning	0–3	160	1.8–2.9	2.7–3.8	2,136
MA/RI	Bay State Wind, part of OCS-A 0500	Planning	2	96	17	113	110
MA/RI	OCS-A 0500 remainder	Planning	3	119	18	137	170
MA/RI	OCS-A 0487 remainder	Planning					
	Total MA/RI Leases		N/A	1,142	232	3,238	8,957
NY/NJ	Ocean Wind 1, part of OCS-A 0498	COP	3	101	2.53	59.59	1,935
NY/NJ	Empire Wind 1, part of OCS-A 0512	COP	0	57	1.14	52.44	28
NY/NJ	Empire Wind 2, part of OCS-A 512	COP	0	90	2	82.80	18
NY/NJ	Atlantic Shores South OCS-A 0499	COP	Up to 5	Up to 141	21	162	2,607
NY/NJ	Ocean Wind 2, part of OCS-A 0532	Planning	2	111	17	130	170
NY/NJ	Atlantic Shores North, OCS-A 0549	Planning	3–8	160–165	25	190	3,393
NY/NJ	OW Ocean Winds East LLC, OCS-A 0537	Planning	2	82	21	103	170
NY/NJ	Attentive Energy LLC, OCS-A 0538	Planning	2	102	27	129	170
NY/NJ	Bight Wind Holdings, LLC, OCS-A 0539	Planning	3	148	38	186	170
NY/NJ	Atlantic Shores Offshore Wind Bight, OCS-A 0541	Planning	2	95	25	120	170
NY/NJ	Invenergy Wind Offshore LLC, OCS-A 0542	Planning	2	99	26	125	170
NY/NJ	Vineyard Mid-Atlantic LLC, OCS-A 0544	Planning	2	104	27	131	170
	Total NY/NJ Leases		N/A	1,295	232	1,470	9,169
DE/MD	Skipjack, part of OCS-A 0519	COP	1	17	4.4	21	32
DE/MD	US Wind, part of OCS-A 0490	COP	4	125	32.5	158	114
DE/MD	GSOE I, OCS-A 0482	Planning	2	96	25.0	121.0	157.6
DE/MD	OCS-A 0519 remainder	Planning					
	Total DE/MD Leases		N/A	238	62	300	303
South Atlantic	CVOW, OCS-A 0497	Built	0	2	0.1	2	11
South Atlantic	CVOW-C, OCS-A 0483	COP	3	208	4	198	13,244
South Atlantic	Kitty Hawk Wind North, OCS-A 0508	COP	1	70	1	66	407
South Atlantic	Kitty Hawk Wind South, OCS-A 0508 remainder	COP	2	123	1	100	1,284

Region[1]	Lease/Project/ Lease Remainder[2]	Status[3]	ESP/OSS Number[19]	Foundation Number[20]	Total Footprint of Foundations (acres)[21]	Seabed Disturbance Based on Addition of Scour Protection (Foundation+Scour Protection) (acres)[22]	Offshore Export Cable Seabed Disturbance (acres)[23]
			Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses and Visual/Recreation-Tourism	Air and Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses and Visual/Recreation-Tourism	Water and Benthic/Cultural Resources and Navigation/Commercial Fisheries/Other Marine Uses	Benthic/Cultural Resources and Navigation/Commercial Fisheries/Other Marine Uses	Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses
South Atlantic	TotalEnergies Renewables Wind, LLC OCS-A 0545	Planning	1	65	17	82	158
South Atlantic	Duke Energy Renewables Wind, LLC OCS-A 0546	Planning	1	65	17	82	158
	Total South Atlantic Leases		N/A	533	39	529	15,261
	OCS Total:		N/A	3,215	566	5,544	33,701

Table E3-1. Offshore Wind Leasing Activities in the U.S. East Coast: Projects and Assumptions (as of March 17, 2023) (part 5)

Region[1]	Lease/Project/ Lease Remainder[2]	Status[3]	Offshore Export Cable Hard Protection (acres)[24]	Anchoring Disturbance (acres)[25]	Inter-array Construction Footprint/Seabed Disruption (acres)[26]	Inter-array Operating Footprint/Seabed Disruption (acres)[27]	Inter-array Cable Hard Protection (acres)[28]
			Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses	Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses	Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses	Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses	Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses
NE	NE Aquaventis	State Project	N/A	N/A	N/A	N/A	N/A
NE	Block Island	State Project, Built	N/A	0.5	4	7.15	N/A
	Total State Waters Leases		N/A	0.5	4	7	N/A
MA/RI	Vineyard Wind 1 part of OCS-A 0501	COP, ROD	35	122	129	90	22.491
MA/RI	South Fork, OCS-A 0517	COP, ROD	10	821	340	19	10.2
MA/RI	Revolution Wind, OCS #	COP	48	21	2,471	98	41.8
MA/RI	Sunrise, OCS-A 0487	COP	25.2	259.8	2,150	95.1	129
MA/RI	New England Wind, OCS-A 0534 and portion of OCS-A 0501 (Phase 1 [i.e., Park City Wind])	COP	2	143	222	51	10
MA/RI	New England Wind, OCS-A 0534 and portion of OCS-A 0501 (Phase 2 [i.e., Commonwealth Wind])	COP	5	199	321	73	14
MA/RI	South Coast Wind, OCS-A 0521	COP	247	442	1,408	213	122
MA/RI	Beacon Wind, part of OCS-A 0520 (Phase 1)	COP	24.00	9	962.8	113	82
MA/RI	Beacon Wind, part of OCS-A 0520 (Phase 2)	COP	24.00	9	962.8	113	82
MA/RI	Vineyard Northeast Wind (OCS-A 0522)	Planning	130	896	1,176	21	21
MA/RI	Bay State Wind, part of OCS-A 0500	Planning	17	442	226	137	137
MA/RI	OCS-A 0500 remainder	Planning	24	248.3	1,206	119	0

Region[1]	Lease/Project/ Lease Remainder[2]	Status[3]	Offshore Export Cable Hard Protection (acres)[24]	Anchoring Disturbance (acres)[25]	Inter-array Construction Footprint/Seabed Disruption (acres)[26]	Inter-array Operating Footprint/Seabed Disruption (acres)[27]	Inter-array Cable Hard Protection (acres)[28]
			Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses	Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses	Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses	Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses	Water and Birds/Bats/Finfish-Invertebrates-EFH/Marine Mammals/Sea Turtles/Land Use and Navigation/Commercial Fisheries/Other Marine Uses
MA/RI	OCS-A 0487 remainder	Planning		248.3			
	Total MA/RI Leases		590	3,859	11,574	1,143	671
NY/NJ	Ocean Wind 1, part of OCS-A 0498	COP	21	293.9	1,484	199	0
NY/NJ	Empire Wind 1, part of OCS-A 0512	COP	5	77.2	838	112	0
NY/NJ	Empire Wind 2, part of OCS-A 512	COP	4	50.4	1,323	177	0
NY/NJ	Atlantic Shores South OCS-A 0499	COP	294	714	2,335	301	301
NY/NJ	Ocean Wind 2, part of OCS-A 0532	Planning	24	335.8	1,631	219	0
NY/NJ	Atlantic Shores North, OCS-A 0549	Planning	393	416	2,162	301	301
NY/NJ	OW Ocean Winds East LLC, OCS-A 0537	Planning	24	335.8	1,205	162	0
NY/NJ	Attentive Energy LLC, OCS-A 0538	Planning	24	335.8	1,499	201	0
NY/NJ	Bight Wind Holdings, LLC, OCS-A 0539	Planning	24	335.8	2,175	292	0
NY/NJ	Atlantic Shores Offshore Wind Bight, OCS-A 0541	Planning	24	335.8	1,396	187	0
NY/NJ	Invenergy Wind Offshore LLC, OCS-A 0542	Planning	24	335.8	1,455	195	0
NY/NJ	Vineyard Mid-Atlantic LLC, OCS-A 0544	Planning	24	335.8	1,529	205	0
	Total NY/NJ Leases		883	3,902	19,033	2,552	603
DE/MD	Skipjack, part of OCS-A 0519	COP	5	67.2	250	33	0
DE/MD	US Wind, part of OCS-A 0490	COP	17	243.5	1,837	246	0
DE/MD	GSOE I, OCS-A 0482	Planning	4.8	335.8	14,10.9	189.2	0
DE/MD	OCS-A 0519 remainder	Planning					
	Total DE/MD Leases		27	647	3,498	469	0
South Atlantic	CVOW, OCS-A 0497	Built	3	0.6	5	3	0
South Atlantic	CVOW-C, OCS-A 0483	COP		9.9	14,819	38	0
South Atlantic	Kitty Hawk Wind North, OCS-A 0508	COP	32	2	5,931	14	0
South Atlantic	Kitty Hawk Wind South, OCS-A 0508 remainder	COP	49	9	7,957	19	0
South Atlantic	TotalEnergies Renewables Wind, LLC OCS-A 0545	Planning	24	4.7	4,631	12	0
South Atlantic	Duke Energy Renewables Wind, LLC OCS-A 0546	Planning	24	4.7	4,631	12	0
	Total South Atlantic Leases		132	31	37,974	98	0
	OCS Total:		1,632	8,439	72,082	4,269	1,274

Table E3-1. Offshore Wind Leasing Activities in the U.S. East Coast: Projects and Assumptions (as of March 17, 2023) (part 6)

Region[1]	Lease/Project/ Lease Remainder[2]	Status[3]	Total of Coolant fluids in WTGs (gallons)[29]	Total Coolant fluids in ESP/OSS (gallons)[30]	Total of Oils and Lubricants in WTGs (gallons)[31]	Total Oils and Lubricants in ESP/OSS (gallons)[32]	Total Diesel Fuel in WTGs (gallons)[33]	Total Diesel Fuel in ESP/OSS (gallons)[34]
			Water	Water	Air and Water	Air and Water	Air and Water	Air and Water
NE	NE Aquaventis	State Project	N/A	N/A	N/A	N/A	N/A	N/A
NE	Block Island	State Project, Built	N/A	N/A	N/A	N/A	N/A	N/A
	Total State Waters Leases		N/A	N/A	N/A	N/A	N/A	N/A
MA/RI	Vineyard Wind 1 part of OCS-A 0501	COP, ROD	42,300	46	383,000	123,559	79,300	5,696
MA/RI	South Fork, OCS-A 0517	COP, ROD	41,208	27	69,732	80,045	9,516	52,834
MA/RI	Revolution Wind, OCS #	COP	343,400	0	330,300	159,138	79,300	105,668
MA/RI	Sunrise, OCS-A 0487	COP	322,796	13,208	208,680	109,570	0	24,304
MA/RI	New England Wind, OCS-A 0534 and portion of OCS-A 0501 (Phase 1 [i.e., Park City Wind])	COP	314,464	4,228	498,604	263,650	98,272	10,936
MA/RI	New England Wind, OCS-A 0534 and portion of OCS-A 0501 (Phase 2 [i.e., Commonwealth Wind])	COP	314,464	9,510	839,608	533,333	162,712	24,606
MA/RI	South Coast Wind, OCS-A 0521	COP	530,024	8,033	433,650	755,000	132,300	200,000
MA/RI	Beacon Wind, part of OCS-A 0520 (Phase 1)	COP	81,968	13,208	415,386	86,001	74,542	35,663
MA/RI	Beacon Wind, part of OCS-A 0520 (Phase 2)	COP	81,968	13,208	415,386	86,001	74,542	35,663
MA/RI	Vineyard Northeast Wind (OCS-A 0522)	Planning	1,268,000	14,792	1,056,640	947,016	0	79,736
MA/RI	Bay State Wind, part of OCS-A 0500	Planning	322,796	50	310,200	160,000	75,200	105,668
MA/RI	OCS-A 0500 remainder	Planning	421,999	12,049	571,497	521,576	90,506	107,491
MA/RI	OCS-A 0487 remainder	Planning						
	Total MA/RI Leases		4,085,387	88,358	5,532,683	3,824,889	876,190	788,265
NY/NJ	Ocean Wind 1, part of OCS-A 0498	COP	39,690	4,488	187,964	238,707	77,714	158,502
NY/NJ	Empire Wind 1, part of OCS-A 0512	COP	49,704	0	236,037	158,503	0	7,925
NY/NJ	Empire Wind 2, part of OCS-A 512	COP	78,480	0	372,690	158,503	0	7,925
NY/NJ	Atlantic Shores South OCS-A 0499	COP	820,000	10,300	606,200	370,050	80,000	75,000
NY/NJ	Ocean Wind 2, part of OCS-A 0532	Planning	330,561	2,992	391,774	185,452	44,677	5,225
NY/NJ	Atlantic Shores North, OCS-A 0549	Planning	643,700	9,150	530,817	557,850	62,800	557,850
NY/NJ	OW Ocean Winds East LLC, OCS-A 0537	Planning	242,613	2,992	287,540	185,452	32,790	100,900
NY/NJ	Attentive Energy LLC, OCS-A 0538	Planning	303,267	2,992	359,425	185,452	40,988	100,900
NY/NJ	Bight Wind Holdings, LLC, OCS-A 0539	Planning	439,736	4,488	521,167	278,177	59,432	151,350
NY/NJ	Atlantic Shores Offshore Wind Bight, OCS-A 0541	Planning	282,038	2,992	334,266	185,452	38,119	100,900
NY/NJ	Invenergy Wind Offshore LLC, OCS-A 0542	Planning	294,169	2,992	348,643	185,452	39,758	100,900
NY/NJ	Vineyard Mid-Atlantic LLC, OCS-A 0544	Planning	309,332	2,992	366,614	185,452	41,807	100,900
	Total NY/NJ Leases		3,833,289	46,381	4,543,136	2,874,500	518,085	1,468,278
DE/MD	Skipjack, part of OCS-A 0519	COP	48,523	1,496	57,508	92,726	6,558	50,450
DE/MD	US Wind, part of OCS-A 0490	COP	366,953	5,985	434,905	370,903	49,595	201,801
DE/MD	GSOE I, OCS-A 0482	Planning	285,071	2,992.3	337,859.8	185,451.6	38,528.5	100,900.3
DE/MD	OCS-A 0519 remainder	Planning						

Region[1]	Lease/Project/ Lease Remainder[2]	Status[3]	Total of Coolant fluids in WTGs (gallons)[29]	Total Coolant fluids in ESP/OSS (gallons)[30]	Total of Oils and Lubricants in WTGs (gallons)[31]	Total Oils and Lubricants in ESP/OSS (gallons)[32]	Total Diesel Fuel in WTGs (gallons)[33]	Total Diesel Fuel in ESP/OSS (gallons)[34]
			Water	Water	Air and Water	Air and Water	Air and Water	Air and Water
	Total DE/MD Leases		700,546	10,473	830,272	649,081	94,682	353,151
South Atlantic	CVOW, OCS-A 0497	Built	846	0	7,660	0	1,586	0
South Atlantic	CVOW-C, OCS-A 0483	COP	855,670	0	437,060	258,300	0	20,409
South Atlantic	Kitty Hawk Wind North, OCS-A 0508	COP	29,165	46	229,800	61,780	47,580	2,848
South Atlantic	Kitty Hawk Wind South, OCS-A 0508 remainder	COP	51,144	93	447,507	247,117	95,894	11,396
South Atlantic	TotalEnergies Renewables Wind, LLC OCS-A 0545	Planning	151,025	23	180,881	94,533	23,385	5,776
South Atlantic	Duke Energy Renewables Wind, LLC OCS-A 0546	Planning	151,025	23	180,601	94,533	23,385	5,776
	Total South Atlantic Leases		1,238,874	185	1,483,509	756,262	191,830	46,204
	OCS Total:		9,858,096	145,398	12,389,600	8,104,732	1,680,786	2,655,898

Table E3-1. Offshore Wind Leasing Activities in the U.S. East Coast: Projects and Assumptions (as of March 17, 2023) (part 7)

Region[1]	Lease/Project/ Lease Remainder[2]	Status[3]	Construction Emissions NOx (tons)[35]	Construction Emissions VOC (tons)[36]	Construction Emissions CO (tons)[37]	Construction Emissions PM_{10} (tons)[38]	Construction Emissions $PM_{2.5}$ (tons)[39]	Construction Emissions SO_2 (tons)[40]	Construction Emissions CO_2e (tons)[41]	Operation Emissions NOx (tpy)[42]	Operation Emissions VOC (tpy)[43]	Operation Emissions CO (tpy)[44]	Operation Emissions PM10 (tpy)[45]	Operation Emissions PM2.5 (tpy)[46]	Operation Emissions SO2 (tpy)[47]	Operation Emissions CO_2e (tpy)[48]
			Air	Air	Air	Air	Air	Air	Air	Air	Air	Air	Air	Air	Air	Air
NE	NE Aquaventis	State Project	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NE	Block Island	State Project, Built	586.0	25.7	101.2	37.2	N/A	0.4	42,940.0	21.4	0.8	2.8	1.4	N/A	0.0	1,572.0
	Total State Waters Leases		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MA/RI	Vineyard Wind 1 part of OCS-A 0501	COP, ROD	4,961	122	1,116	172	125	38	250,920	71.0	2.0	18.0	12.3	12.0	0.9	342,121
MA/RI	South Fork, OCS-A 0517	COP, ROD	521.5	11.7	80.7	17.5	16.9	3.6	97,026	92.9	1.9	17.3	3	2.8	0.5	18,894
MA/RI	Revolution Wind, OCS #	COP	22,395.4	80.6	5,468.3	757.7	732.1	69.3	1,702,429	322.6	12.4	93.3	12.3	12	0.9	73,349
MA/RI	Sunrise, OCS-A 0487	COP	2,092.80	49.1	869.4	38.6	38.6	2.1	230,504	183.8	4.3	76.3	3.4	3.4	0.2	20,242
MA/RI	New England Wind, OCS-A 0534 and portion of OCS-A 0501 (Phase 1 [i.e., Park City Wind])	COP	5,917	124	1,406	238	230	41	393,627.00	178	3.2	45	6	5.8	0.5	20,259
MA/RI	New England Wind, OCS-A 0534 and portion of OCS-A 0501 (Phase 2 [i.e., Commonwealth Wind])	COP	7,732	164	1,841	339	329	54	520,958.00	179	3.2	45	6	5.8	0.5	27,594
MA/RI	South Coast Wind, OCS-A 0521	COP	39,965	1,590	8,284	2,897	1,566	1,556	2,633,405	729	13	180	24	19	28	48,898

Region[1]	Lease/Project/ Lease Remainder[2]	Status[3]	Construction Emissions NOx (tons)[35]	Construction Emissions VOC (tons)[36]	Construction Emissions CO (tons)[37]	Construction Emissions PM_{10} (tons)[38]	Construction Emissions $PM_{2.5}$ (tons)[39]	Construction Emissions SO_2 (tons)[40]	Construction Emissions CO_2e (tons)[41]	Operation Emissions NOx (tpy)[42]	Operation Emissions VOC (tpy)[43]	Operation Emissions CO (tpy)[44]	Operation Emissions PM10 (tpy)[45]	Operation Emissions PM2.5 (tpy)[46]	Operation Emissions SO2 (tpy)[47]	Operation Emissions CO_2e (tpy)[48]
			Air	Air	Air	Air	Air	Air	Air	Air	Air	Air	Air	Air	Air	Air
MA/RI	Beacon Wind, part of OCS-A 0520 (Phase 1)	COP	8,838.6	364.8	878.8	145.2	134.9	253.8	506,326.2	62.2	2.5	11.8	1.7	1.6	2.5	16,034.4
MA/RI	Beacon Wind, part of OCS-A 0520 (Phase 2)	COP	8,838.6	364.8	878.8	145.2	134.9	253.8	506,326.2	62.2	2.5	11.8	1.7	1.6	2.5	16,034.4
MA/RI	Vineyard Northeast Wind (OCS-A 0522)	Planning	17,298	390	4,087	635	613	133.1	1,246,612	773	14	196	26	25	2.6	86,780
MA/RI	Bay State Wind, part of OCS-A 0500	Planning	12,304.3	148.8	2,936.9	451.6	74.52	61.01	304,762	249.9	6.7	64.8	11.7	11.4	1.0	21,252
MA/RI	OCS-A 0500 remainder	Planning	15,222.7	396.6	3,239.3	679.0	464.7	286.8	976,299.7	337.8	7.6	88.3	12.6	11.7	4.7	80,433.5
MA/RI	OCS-A 0487 remainder	Planning														
	Total MA/RI Leases		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NY/NJ	Ocean Wind 1, part of OCS-A 0498	COP	11,173.00	293.90	2,156.00	365.60	349.50	115.30	665,960.00	159.00	4.10	40.00	5.60	5.40	0.90	11,912.00
NY/NJ	Empire Wind 1, part of OCS-A 0512	COP	2,895.6	71.3	641.3	95.7	94.6	21.5	186,824.6	167.9	3.1	39.6	5.5	5.3	0.5	11,263.7
NY/NJ	Empire Wind 2, part of OCS-A 512	COP	4,572.0	112.6	1,012.6	151.2	149.4	34.0	294,986.2	265.1	4.8	62.5	8.7	8.3	0.7	17,784.8
NY/NJ	Atlantic Shores South OCS-A 0499	COP	2,089	40	503	70	86	7	139,357	519	9	121	17	16	1	33,566
NY/NJ	Ocean Wind 2, part of OCS-A 0532	Planning	5,638.8	138.8	1,248.9	186.4	184.3	41.9	363,816.3	327.0	6.0	77.1	10.7	10.3	0.9	21,934.6
NY/NJ	Atlantic Shores North, OCS-A 0549	Planning	7,413.6	175.2	1,920.4	248.0	240.2	31.3	528,676.1	521.1	8.7	121.7	16.7	16.2	1.4	34,948.7
NY/NJ	OW Ocean Winds East LLC, OCS-A 0537	Planning	4,165.6	102.6	922.6	137.7	136.1	30.9	268,765.2	241.6	4.4	57.0	7.9	7.6	0.7	16,203.9
NY/NJ	Attentive Energy LLC, OCS-A 0538	Planning	5,181.6	127.6	1,147.7	171.3	169.3	38.5	334,317.7	300.5	5.5	70.8	9.8	9.4	0.8	20,156.1
NY/NJ	Bight Wind Holdings, LLC, OCS-A 0539	Planning	7,518.4	185.1	1,665.2	248.6	245.7	55.9	485,088.4	436.0	7.9	102.8	14.3	13.7	1.2	29,246.1
NY/NJ	Atlantic Shores Offshore Wind Bight, OCS-A 0541	Planning	4,826.0	118.8	1,068.9	159.6	157.7	35.9	311,374.3	279.9	5.1	66.0	9.2	8.8	0.8	18,772.8
NY/NJ	Invenergy Wind Offshore LLC, OCS-A 0542	Planning	5,029.2	123.8	1,113.9	166.3	164.4	37.4	324,484.8	291.7	5.3	68.8	9.6	9.1	0.8	19,563.3
NY/NJ	Vineyard Mid-Atlantic LLC, OCS-A 0544	Planning	5,283.2	130.1	1,170.2	174.7	172.7	39.2	340,872.9	306.4	5.6	72.2	10.0	9.6	0.8	20,551.3
	Total NY/NJ Leases		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DE/MD	Skipjack, part of OCS-A 0519	COP	863.6	21.3	191.3	28.6	28.2	6.4	55,719.6	50.1	0.9	11.8	1.6	1.6	0.1	3,359.3

Region[1]	Lease/Project/ Lease Remainder[2]	Status[3]	Construction Emissions NOx (tons)[35]	Construction Emissions VOC (tons)[36]	Construction Emissions CO (tons)[37]	Construction Emissions PM_{10} (tons)[38]	Construction Emissions $PM_{2.5}$ (tons)[39]	Construction Emissions SO_2 (tons)[40]	Construction Emissions CO_2e (tons)[41]	Operation Emissions NOx (tpy)[42]	Operation Emissions VOC (tpy)[43]	Operation Emissions CO (tpy)[44]	Operation Emissions PM10 (tpy)[45]	Operation Emissions PM2.5 (tpy)[46]	Operation Emissions SO2 (tpy)[47]	Operation Emissions CO_2e (tpy)[48]
			Air	Air	Air	Air	Air	Air	Air	Air	Air	Air	Air	Air	Air	Air
DE/MD	US Wind, part of OCS-A 0490	COP	6,350.0	156.4	1,406.4	210.0	207.5	47.2	409,703.0	368.3	6.7	86.8	12.1	11.5	1.0	24,701.1
DE/MD	GSOE I, OCS-A 0482	Planning	4,876.8	120.1	1,080.2	161.2	159.4	36.2	314,651.9	282.8	5.1	66.7	9.3	8.9	0.8	18,970.4
DE/MD	OCS-A 0519 remainder	Planning														
	Total DE/MD Leases		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
South Atlantic	CVOW, OCS-A 0497	Built	193.2	8.5	48.2	6.2	6.0	3.9	12,069.1	7.4	0.4	3.4	0.3	0.3	0.1	681.0
South Atlantic	CVOW-C, OCS-A 0483	COP	20,093.0	883.8	5,008.3	641.3	622.1	409.1	1,255,186.2	773.6	43.1	352.6	35.4	34.4	12.5	70,819.2
South Atlantic	Kitty Hawk Wind North, OCS-A 0508	COP	7,950.5	359.7	1,681.9	222.9	216.2	200.8	499,886.0	287.2	16.9	148.5	14.6	14.2	4.2	28,209.0
South Atlantic	Kitty Hawk Wind South, OCS-A 0508 remainder	COP	10,693.5	460.4	2,965.2	372.2	361.0	178.8	664,782.0	430.6	23.1	178.6	18.3	17.7	7.3	37,503.0
South Atlantic	TotalEnergies Renewables Wind, LLC OCS-A 0545	Planning	6,279.0	276.2	1,565.1	200.4	194.4	127.8	392,245.7	241.8	13.5	110.2	11.1	10.7	3.9	22,131.0
South Atlantic	Duke Energy Renewables Wind, LLC OCS-A 0546	Planning	6,279.0	276.2	1,565.1	200.4	194.4	127.8	392,245.7	241.8	13.5	110.2	11.1	10.7	3.9	22,131.0
	Total South Atlantic Leases		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	OCS Total:		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

BOEM recognizes that the estimates presented within this cumulative analysis are likely high, conservative estimates; however, BOEM believes that this analysis is appropriately capturing the potential cumulative impacts and errs on the side of maximum impacts. Totals by lease area and by OCS may not fully sum due to rounding errors.

Unless otherwise noted, assumptions below are based on what has been most commonly submitted via previous and current COPs. These may require updates.

[1] Categorizes each project by its geographic area and separates United States offshore wind projects into the following regions to allow for a holistic look at projects in close proximity to others:

i. NE: Northeast State Waters leases that do not align to state projects (include a single strand of WTGs and no OSSs)

ii. MA/RI: Leases from Massachusetts and Rhode Island (a 1x1–nm grid spacing is assumed if not included in COP)

iii. NY/NJ: Leases from New York and New Jersey (a 1x1–nm grid spacing is assumed if not included in COP)

iv. DE/MD: Leases from Delaware and Maryland (a 1x1–nm grid spacing is assumed if not included in COP)

v. South Atlantic: Leases from Virginia and North Carolina (a 1x1–nm grid spacing is assumed if not included in COP)

[2] Provides the name and, if applicable, part of a project, including the project's OCS number.

[3] Provides the status of the project, and should be classified as a State Project, COP, Record of Decision (ROD), and/or Built; otherwise the project should be labeled as Planning.

[4] These 8 columns are used as a template for the EIS. Project NEPA Coordinators pull these headers for their project to fill in a project-specific table of resources with checkmarks in the EIS they are drafting. These columns identify lease areas that are applicable to each resource based on the geographic analysis areas shown in the EIS.

[5] This column estimates the construction time period as a range for each project as provided in the COP. This estimate is for offshore components only.
If there is no COP, the estimated dates are based on information as of February 1, 2022, and are subject to change when an applicant submits a COP or as project COPs progress through the approval process. Furthermore, BOEM assumes that construction of all the foundations would be installed during year 1 of a given project's construction schedule with the remaining work completed in year 2. If there is no other information, assume the estimated offshore construction time period is "By 2030".

[6] Compare the dimensions of the turbine provided in the COP (if available) with known turbine capacities to determine the estimated capacity of the turbine to be installed. If the information is provided in the COP, use that.
Otherwise, use the best available public facing information in order to estimate the expected turbine size. For those projects without announced WTG sizes, use the known dimensions of turbines of the same capacity as the prototype capacity, rounded to the nearest even number, for the current year in DOE's most recent Offshore Wind Market Report (for 2022, https://www.energy.gov/eere/wind/articles/offshore-wind-market-report-2022-edition). NOTE: A different set of assumptions may be necessary for floating offshore wind, and this should be considered once floating COPs are being received.

[7] This column showcases the top of the envelope estimate based on the COP. This information will be updated to whatever is the most up to date publicly available data at the time. Often, the final generating capacity in the EIS is much more conservative.
If not included in the COP, use the formula below:
Generating Capacity = Turbine Number (Column Z) * Expected Turbine Size (Column N MW)
*Note: If you are including a range in this cell for your project, be sure to update the subregion and overall OCS total numbers by adding in the larger value of your range.

[8] Often times, COPs provide the total export cable length. If not, ask for this data from the developer. However, the COP typically reports in nautical miles, so this must be converted into statute miles. If the COP provides the export cable length rather than the export cable corridor length, you may skip Columns Q, R, and S.
Statute miles = nautical miles * (1.1508 SM/NM)
If the value is provided to you as a range, use the higher value.

[9] Often times, COPs provide the corridor length, rather than the total export cable length. However, the COP typically reports in nautical miles, so this must be converted into statute miles.
Statute miles = nautical miles * 1.15 (1.15 Statute Mile = 1 Nautical Mile)

[10] This number should come from the COP if the corridor length is provided but may have to be interpreted as COPs typically provide a description such as "up to x number of cables". In these cases, use the max case for the number of export cables.
If this information is not available, proceed to Column S to estimate the total export cable length.

[11] When the export cable length is not provided in the COP, estimate this value by using the following formula:
ESTIMATED Total Export Cable Length = [export cable corridor length (Column Q miles)] * [number of export cables (Column R)]

If neither the export cable length nor the export cable corridor length are included in the COP, assume that each offshore wind development has its own cable (both onshore and offshore) and that future projects would not utilize a regional transmission line. The length of offshore export cable for those lease areas without a known project size has been assumed to total 200 statute miles for fixed foundation development. When using the assumed 200 mile value, Column Q and Column R will be left blank (this is denoted in the main tab by a -).

[12] This number should come from the COP. If it does, ensure the value is converted to acres. If not, use the formula below to estimate:
Cable Footprint = [[COP Export Cable Length (Column P miles) OR ESTIMATED Export Cable Length (Column S miles)] * (5,280 ft/mile) * 1 ft]/(43,560 sqft/acre)
Note: If the COP provides the export cable length (Column P), use that in the equation above, otherwise use the estimated export cable length value from Column S.
The 1 ft value is the typical cable diameter provided from previously submitted COPs. Use this value unless the COP reports a different value.

[13] This number should come from the COP. If not, ask for this data from the developer.
If not available, assume the disturbance width is 6.5 feet based on COPs submitted to date. This column represents an important number for calculating the area of benthic disturbance from construction.

[14] This number should come from the COP. If not, ask for this data from the developer. If not available, use the following estimated formula:
inter-array cable length = turbine # (Column Z) * 1.48 miles
The 1.48 miles factor is based on COPs submitted to date (2.4 kilometers).

[15] This number should come from the COP. If not, ask for this data from the developer.
Otherwise, use the best available public facing information. For those projects without announced WTG dimensions, use the known dimensions of turbines of the same capacity as the prototype capacity, rounded to the nearest even number, for the current year in DOE's most recent Offshore Wind Market Report (for 2022, https://www.energy.gov/eere/wind/articles/offshore-wind-market-report-2022-edition). The report lists values in meters, ensure these values are converted to feet. NOTE: A different set of assumptions may be necessary for floating offshore wind, and this should be considered once floating COPs are being received.

[16] This number should come from the COP.
Otherwise, use the best available public facing information. For those projects without announced WTG dimensions, use the known dimensions of turbines of the same capacity as the prototype capacity, rounded to the nearest even number, for the current year in DOE's most recent Offshore Wind Market Report (for 2022, https://www.energy.gov/eere/wind/articles/offshore-wind-market-report-2022-edition). The report lists values in meters, ensure these values are converted to feet. NOTE: A different set of assumptions may be necessary for floating offshore wind, and this should be considered once floating COPs are being received.

[17] This number should come from the COP. If not, use the following assumption:
total heigh of turbine = rotor diameter (Column X feet) + 100 feet OR 853 feet, whichever is higher
The 100 ft value is the assumption for an air gap. 853 ft comes from a turbine model already available that has been used in visual simulations but has a larger air gap (Haliade X-12).

[18] This number should come from the COP. If not, ask for this data from the developer. If not available, BOEM staff will assume this data based on best available information.
*Note: If you are including a range in this cell for your project, be sure to update the subregion and overall OCS total numbers by adding in the larger value of your range.

[19] This number should come from the COP. If not, assume that for every 50 turbines there would be one ESP/OSS installed.

[20] This number should come from the COP. If not, ask for this data from the developer. If not available, use the following estimated formula:
foundation # = turbine # (Column Z) + ESP/OSS # (Column AA)
*Note: If you are including a range in this cell for your project, be sure to update the subregion and overall OCS total numbers by adding in the larger value of your range.

[21] This number should come from the COP and is typically included as the diameter of a monopile. However, there are variances to how the developer presents this information in a COP. Additionally, COPs sometimes include a formula to derive this information. If so, use said formula. If this information is not included in a COP, use the following formula to estimate:
foundation footprint = 0.26 acres * foundation # (Column AB)
Assumption of 0.26 acres is based on monopile size used in Ocean Wind and other projects with 12-14 MW turbines, subtracting scour footprint from total location footprint.
*Note: If you are including a range in this cell for your project, be sure to update the subregion and overall OCS total numbers by adding in the larger value of your range.

[22] This number should come from the COP. If the COP provides a range, include only the highest value. If not, use the following formula to estimate:
Seabed Disturbance + Scour = [1 acre * foundation # (Column AB)] + foundation footprint (Column AC acres)
The "1" is based off of a previously submitted COPs with a scour protection of 1 acre
*Note: If you are including a range in this cell for your project, be sure to update the subregion and overall OCS total numbers by adding in the larger value of your range.

[23] This number should come from the COP. If so, ensure it is converted to acres. If not, use the following formula to estimate:
Seabed Disturbance = [[COP Export Cable Length (Column P miles) OR ESTIMATED Export Cable Length (Column S miles)] * 5,280 ft/mile * installation tool disturbance width (Column U ft)]/(43,560 sqft/acre)
Note: If the COP provides the export cable length (Column P), use that in the equation above. Otherwise, use the estimated export cable length value from Column S.
Offshore export cable seabed bottom disturbance is assumed to be due to installation of the export cable, the use of jack-up vessels, the need to perform dredging, and boulder removal.

[24] This number should come from the COP. If so, ensure it is converted to acres. If not, use the following formula to estimate:
Offshore Export Cable Hard Protection = [[COP Export Cable Length (Column P miles) OR ESTIMATED Export Cable Length (Column S miles)] * 5,280 ft/mile * 0.10 * 9.8 ft]/(43,560 sqft/acre)
Note: If the COP provides the export cable length (Column P), use that in the equation above. Otherwise, use the estimated export cable length value from Column S.
This equation uses the 9.8 ft as the width of a concrete mattress used in previously submitted COPs and multiplies by 10% based on the assumption built in to previously submitted COPs on how much of the cable route will require hard protection/mattressing/armoring.

[25] This number should come from the COP. If so, ensure it is converted to acres. If not, use the following formula to estimate:
Anchoring Disturbance = [COP Export Cable Length (Column P miles) OR ESTIMATED Export Cable Length (Column S miles)] * (the corresponding subregion total COP anchoring disturbance per export cable length total)
Note: If the COP provides the export cable length (Column P), use that in the equation above. Otherwise, use the estimated export cable length value from Column S.
To provide an assumption for non-COPs, please calculate the total anchoring disturbance values for COPs listed in the Scenario tab for a specific subregion and divide by the corresponding COP provided total export cable length associated with that specific subregion. (Note: White color coded cells are values taken directly from a COP). For example, if your new project is within the MA/RI region but does not have a COP yet, or does not provide the anchoring disturbance value, calculate using the following formula from the values currently within the MA/RI region.
[(SUM Column AG white color coded cells)/(SUM Corresponding Column P white color coded cells)] * (new project Column S or P)

[26] The length of expected inter-array cables should come from the COP. If so, ensure it is converted to acres. If not, use the following formula to estimate:
Inter-array construction seabed disruption = foundation # (Column AB) * (the corresponding subregion total COP inter-array construction seabed disruption per foundation total)
To provide an assumption for non-COPs, please calculate the total inter-array construction seabed disruption values for COPs listed in the Scenario tab for a specific subregion and divide by the corresponding COP provided total foundations associated with that specific subregion. (Note: White color coded cells are values taken directly from a COP). For example, if your new project is within the MA/RI region but does not have a COP yet, or does not provide the construction seabed disruption value, calculate using the following formula from the values currently within the MA/RI region.
[(SUM Column AH white color coded cells)/(SUM Corresponding Column AB white color coded cells)] * (new project Column AB)

[27] This number should come from the COP. If so, ensure it is converted to acres. If not, use the following formula to estimate:
inter-array operating seabed disruption = foundation # (Column AB) * (the corresponding subregion total COP inter-array operating seabed disruption per foundation total)
To provide an assumption for non-COPs, please calculate the total inter-array operating seabed disruption values for COPs listed in the Scenario tab for a specific subregion and divide by the corresponding COP provided total foundations associated with that specific subregion. (Note: White color coded cells are values taken directly from a COP). For example, if your new project is within the MA/RI region but does not have a COP yet, or does not provide the operating seabed disruption value, calculate using the following formula from the values currently within the MA/RI region.
[(SUM Column AI white color coded cells)/(SUM Corresponding Column AB white color coded cells)] * (new project Column AB)

[28] This number should be come from the COP. If not, this number is assumed to be zero.

[29] This column is not applicable to State Waters projects.
From the COP: Total of Coolant Fluids in WTGs = [sum of all coolants provided in the COP (any material used as a coolant, not including water)] * [turbine # (Column Z)]
To provide an assumption for non-COPs, please calculate the total coolant fluids in WTGs for all COPs listed in the Scenario tab for a specific subregion and divide by the corresponding COP provided total foundations associated with that specific subregion. (Note: White color coded cells are values taken directly from a COP). For example, if your new project is within the MA/RI region but does not have a COP yet, or does not provide the total coolant fluids in WTGs value, calculate using the following formula from the values currently within the MA/RI region.
[(SUM Column AK white color coded cells)/(SUM Corresponding Column Z white color coded cells)] * (new project Column Z)

[30] This column is not applicable to State Waters projects.
From the COP: Total of Coolant Fluids in ESP/OSS = [sum of all coolants provided in the COP (any material used as a coolant, not including water)] * [ESP/OSS # (Column AA)]
To provide an assumption for non-COPs, please calculate the total coolant fluids in ESP/OSSs for all COPs listed in the Scenario tab for a specific subregion and divide by the corresponding COP provided total foundations associated with that specific subregion. (Note: White color coded cells are values taken directly from a COP). For example, if your new project is within the MA/RI region but does not have a COP yet, or does not provide the total coolant fluids in ESP/OSSs value, calculate using the following formula from the values currently within the MA/RI region.
[(SUM Column AL white color coded cells)/(SUM Corresponding Column AA white color coded cells)] * (new project Column AA)

[31] This column is not applicable to State Waters projects.
From the COP: Total of Oils and Lubricants in WTGs = [sum of all oils and lubricants provided in the COP] * [turbine # (Column Z)]
To provide an assumption for non-COPs, please calculate the total oils and lubricants in WTGs for all COPs listed in the Scenario tab for a specific subregion and divide by the corresponding COP provided total foundations associated with that specific subregion. (Note: White color coded cells are values taken directly from a COP). For example, if your new project is within the MA/RI region but does not have a COP yet, or does not provide the total oils and lubricants in WTGs value, calculate using the following formula from the values currently within the MA/RI region.
[(SUM Column AM white color coded cells)/(SUM Corresponding Column Z white color coded cells)] * (new project Column Z)

[32] This column is not applicable to State Waters projects.
From the COP: Total of Oils and Lubricants in ESPs/OSSs = [sum of all oils and lubricants provided in the COP] * [ESP/OSS # (Column AA)]
To provide an assumption for non-COPs, please calculate the total oils and lubricants in ESP/OSSs for all COPs listed in the Scenario tab for a specific subregion and divide by the corresponding COP provided total foundations associated with that specific subregion. (Note: White color coded cells are values taken directly from a COP). For example, if your new project is within the MA/RI region but does not have a COP yet, or does not provide the total oils and lubricants in ESP/OSSs value, calculate using the following formula from the values currently within the MA/RI region.
[(SUM Column AN white color coded cells)/(SUM Corresponding Column AA white color coded cells)] * (new project Column AA)

[33] This column is not applicable to State Waters projects.
From the COP: Total of Diesel Fuel in WTGs = [sum of all diesel fuel provided in the COP] * [turbine # (Column Z)]
To provide an assumption for non-COPs, please calculate the total diesel fuel in WTGs for all COPs listed in the Scenario tab for a specific subregion and divide by the corresponding COP provided total foundations associated with that specific subregion. (Note: White color coded cells are values taken directly from a COP). For example, if your new project is within the MA/RI region but does not have a COP yet, or does not provide the total diesel fuel in WTGs value, calculate the following formula from the values currently within the MA/RI region.
[(SUM Column AO white color coded cells)/(SUM Corresponding Column Z white color coded cells)] * (new project Column Z)

[34] This column is not applicable to State Waters projects.
From the COP: Total of Diesel Fuel in ESPs/OSSs = [sum of all diesel fuel provided in the COP] * [ESP/OSS # (Column AA)]
To provide an assumption for non-COPs, please calculate the total diesel fuels in ESP/OSSs for all COPs listed in the Scenario tab for a specific subregion and divide by the corresponding COP provided total foundations associated with that specific subregion. (Note: White color coded cells are values taken directly from a COP). For example, if your new project is within the MA/RI region but does not have a COP yet, or does not provide the total diesel fuels in ESP/OSSs value, calculate using the following formula from the values currently within the MA/RI region.
[(SUM Column AP white color coded cells)/(SUM Corresponding Column AA white color coded cells)] * (new project Column AA)

[35] This number should come from the COP, but may require a summation of numbers provided per chemical compound. If not in the COP, ask for this data from the developer. If not available, use the following assumption:
Construction emissions are totals for all construction activities, which take place over multiple years.
To provide an assumption for non-COPs, please calculate the total construction emissions of Nox for all COPs listed in the Scenario tab for a specific subregion and divide by the corresponding COP provided total foundations associated with that specific subregion. (Note: White color coded cells are values taken directly from a COP). For example, if your new project is within the MA/RI region but does not have a COP yet, or does not provide the total construction emissions of Nox value, calculate using the following formula from the values currently within the MA/RI region.
[(SUM Column AQ white color coded cells)/(SUM Corresponding Column AB white color coded cells)] * (new project Column AB)

[36] This number should come from the COP, but may require a summation of numbers provided per chemical compound. If not in the COP, ask for this data from the developer. If not available, use the following assumption:
Construction emissions are totals for all construction activities, which take place over multiple years.
To provide an assumption for non-COPs, please calculate the total construction emissions of VOC for all COPs listed in the Scenario tab for a specific subregion and divide by the corresponding COP provided total foundations associated with that specific subregion. (Note: White color coded cells are values taken directly from a COP). For example, if your new project is within the MA/RI region but does not have a COP yet, or does not provide the total construction emissions of VOC value, calculate using the following formula from the values currently within the MA/RI region.
[(SUM Column AR white color coded cells)/(SUM Corresponding Column AB white color coded cells)] * (new project Column AB)

[37] This number should come from the COP, but may require a summation of numbers provided per chemical compound. If not in the COP, ask for this data from the developer. If not available, use the following assumption:
Construction emissions are totals for all construction activities, which take place over multiple years.
To provide an assumption for non-COPs, please calculate the total construction emissions of CO for all COPs listed in the Scenario tab for a specific subregion and divide by the corresponding COP provided total foundations associated with that specific subregion. (Note: White color coded cells are values taken directly from a COP). For example, if your new project is within the MA/RI region but does not have a COP yet, or does not provide the total construction emissions of CO value, calculate using the following formula from the values currently within the MA/RI region.
[(SUM Column AS white color coded cells)/(SUM Corresponding Column AB white color coded cells)] * (new project Column AB)

[38] This number should come from the COP, but may require a summation of numbers provided per chemical compound. If not in the COP, ask for this data from the developer. If not available, use the following assumption:
Construction emissions are totals for all construction activities, which take place over multiple years.
To provide an assumption for non-COPs, please calculate the total construction emissions of PM10 for all COPs listed in the Scenario tab for a specific subregion and divide by the corresponding COP provided total foundations associated with that specific subregion. (Note: White color coded cells are values taken directly from a COP). For example, if your new project is within the MA/RI region but does not have a COP yet, or does not provide the total construction emissions of PM10 value, calculate using the following formula from the values currently within the MA/RI region.
[(SUM Column AT white color coded cells)/(SUM Corresponding Column AB white color coded cells)] * (new project Column AB)

[39] This number should come from the COP, but may require a summation of numbers provided per chemical compound. If not in the COP, ask for this data from the developer. If not available, use the following assumption:
Construction emissions are totals for all construction activities, which take place over multiple years.
To provide an assumption for non-COPs, please calculate the total construction emissions of PM2.5 for all COPs listed in the Scenario tab for a specific subregion and divide by the corresponding COP provided total foundations associated with that specific subregion. (Note: White color coded cells are values taken directly from a COP). For example, if your new project is within the MA/RI region but does not have a COP yet, or does not provide the total construction emissions of PM2.5 value, calculate the following formula from the values currently within the MA/RI region.
[(SUM Column AU white color coded cells)/(SUM Corresponding Column AB white color coded cells)] * (new project Column AB)

[40] This number should come from the COP, but may require a summation of numbers provided per chemical compound. If not in the COP, ask for this data from the developer. If not available, use the following assumption:
Construction emissions are totals for all construction activities, which take place over multiple years.
To provide an assumption for non-COPs, please calculate the total construction emissions of SO2 for all COPs listed in the Scenario tab for a specific subregion and divide by the corresponding COP provided total foundations associated with that specific subregion. (Note: White color coded cells are values taken directly from a COP). For example, if your new project is within the MA/RI region but does not have a COP yet, or does not provide the total construction emissions of SO2 value, calculate using the following formula from the values currently within the MA/RI region.
[(SUM Column AV white color coded cells)/(SUM Corresponding Column AB white color coded cells)] * (new project Column AB)

[41] This number should come from the COP. If not, request from the developer. For COPs that report CO2 equivalent per pollutant, total all pollutant values.
To provide an assumption for non-COPs, please calculate the total construction emissions of CO2e for all COPs listed in the Scenario tab for a specific subregion and divide by the corresponding COP provided total foundations associated with that specific subregion. (Note: White color coded cells are values taken directly from a COP). For example, if your new project is within the MA/RI region but does not have a COP yet, or does not provide the total construction emissions of CO2e value, calculate using the following formula from the values currently within the MA/RI region.
[(SUM Column AW white color coded cells)/(SUM Corresponding Column AB white color coded cells)] * (new project Column AB)

[42] This number should come from the COP, but may require a summation of numbers provided per chemical compound. If not in the COP, ask for this data from the developer. If not available, use the following assumption:
Operations emissions are the highest annual level if all years not expected to be equal.
To provide an assumption for non-COPs, please calculate the total operation emissions of Nox for all COPs listed in the Scenario tab for a specific subregion and divide by the corresponding COP provided total foundations associated with that specific subregion. (Note: White color coded cells are values taken directly from a COP). For example, if your new project is within the MA/RI region but does not have a COP yet, or does not provide the total operation emissions of Nox value, calculate using the following formula from the values currently within the MA/RI region.
[(SUM Column AX white color coded cells)/(SUM Corresponding Column AB white color coded cells)] * (new project Column AB)

[43] This number should come from the COP, but may require a summation of numbers provided per chemical compound. If not in the COP, ask for this data from the developer. If not available, use the following assumption:
Operations emissions are the highest annual level if all years not expected to be equal.
To provide an assumption for non-COPs, please calculate the total operation emissions of VOC for all COPs listed in the Scenario tab for a specific subregion and divide by the corresponding COP provided total foundations associated with that specific subregion. (Note: White color coded cells are values taken directly from a COP). For example, if your new project is within the MA/RI region but does not have a COP yet, or does not provide the total operation emissions of VOC value, calculate using the following formula from the values currently within the MA/RI region.
[(SUM Column AY white color coded cells)/(SUM Corresponding Column AB white color coded cells)] * (new project Column AB)

[44] This number should come from the COP, but may require a summation of numbers provided per chemical compound. If not in the COP, ask for this data from the developer. If not available, use the following assumption:
Operations emissions are the highest annual level if all years not expected to be equal.
To provide an assumption for non-COPs, please calculate the total operation emissions of CO for all COPs listed in the Scenario tab for a specific subregion and divide by the corresponding COP provided total foundations associated with that specific subregion. (Note: White color coded cells are values taken directly from a COP). For example, if your new project is within the MA/RI region but does not have a COP yet, or does not provide the total operation emissions of CO value, calculate using the following formula from the values currently within the MA/RI region.
[(SUM Column AZ white color coded cells)/(SUM Corresponding Column AB white color coded cells)] * (new project Column AB)

[45] This number should come from the COP, but may require a summation of numbers provided per chemical compound. If not in the COP, ask for this data from the developer. If not available, use the following assumption:
Operations emissions are the highest annual level if all years not expected to be equal.
To provide an assumption for non-COPs, please calculate the total operation emissions of PM10 for all COPs listed in the Scenario tab for a specific subregion and divide by the corresponding COP provided total foundations associated with that specific subregion. (Note: White color coded cells are values taken directly from a COP). For example, if your new project is within the MA/RI region but does not have a COP yet, or does not provide the total operation emissions of PM10 value, calculate the following formula from the values currently within the MA/RI region.
[(SUM Column BA white color coded cells)/(SUM Corresponding Column AB white color coded cells)] * (new project Column AB)

[46] This number should come from the COP, but may require a summation of numbers provided per chemical compound. If not in the COP, ask for this data from the developer. If not available, use the following assumption:
Operations emissions are the highest annual level if all years not expected to be equal.
To provide an assumption for non-COPs, please calculate the total operation emissions of PM2.5 for all COPs listed in the Scenario tab for a specific subregion and divide by the corresponding COP provided total foundations associated with that specific subregion. (Note: White color coded cells are values taken directly from a COP). For example, if your new project is within the MA/RI region but does not have a COP yet, or does not provide the total operation emissions of PM2.5 value, calculate using the following formula from the values currently within the MA/RI region.
[(SUM Column BB white color coded cells)/(SUM Corresponding Column AB white color coded cells)] * (new project Column AB)

[47] This number should come from the COP, but may require a summation of numbers provided per chemical compound. If not in the COP, ask for this data from the developer. If not available, use the following assumption:
Operations emissions are the highest annual level if all years not expected to be equal.

To provide an assumption for non-COPs, please calculate the total operation emissions of SO2 for all COPs listed in the Scenario tab for a specific subregion and divide by the corresponding COP provided total foundations associated with that specific subregion. (Note: White color coded cells are values taken directly from a COP). For example, if your new project is within the MA/RI region but does not have a COP yet, or does not provide the total operation emissions of SO2 value, calculate using the following formula from the values currently within the MA/RI region.
[(SUM Column BC white color coded cells)/(SUM Corresponding Column AB white color coded cells)] * (new project Column AB)

[48] This number should come from the COP. If not, request from the developer. For COPs that report CO2 equivalent per pollutant, total all pollutant values.
To provide an assumption for non-COPs, please calculate the total operation emissions of CO2e for all COPs listed in the Scenario tab for a specific subregion and divide by the corresponding COP provided total foundations associated with that specific subregion. (Note: White color coded cells are values taken directly from a COP). For example, if your new project is within the MA/RI region but does not have a COP yet, or does not provide the total operation emissions of CO2e value, calculate using the following formula from the values currently within the MA/RI region.
[(SUM Column BD white color coded cells)/(SUM Corresponding Column AB white color coded cells)] * (new project Column AB)

LITERATURE CITED

Bureau of Ocean Energy Management (BOEM). 2019. *National Environmental Policy Act Documentation for Impact-Producing Factors in the Offshore Wind Cumulative Impacts Scenario on the North Atlantic Outer Continental Shelf*. Available at: https://www.boem.gov/sites/default/files/environmental-stewardship/Environmental-Studies/Renewable-Energy/IPFs-in-the-Offshore-Wind-Cumulative-Impacts-Scenario-on-the-N-OCS.pdf. Accessed December 2020.

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