

## **APPENDIX E4**

### **Maximum-Case Scenario Estimates for Select Offshore Wind Project Components**



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## **Introduction**

The following table provides maximum-case scenario estimates of potential No Action, Proposed Action, and other action alternative impacts for specific offshore wind project components, 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 cumulative estimates developed by Bureau of Ocean Energy Management BOEM (see Table E3-1 in Appendix E3). All numbers are estimates and subject to change.

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**Table E4-1. Maximum-Case Scenario Estimates of Potential Impacts for Specific Offshore Wind Project Components**

Project Component	Geographic Analysis Area	OCS Total (without Proposed Action)*	Proposed Action	Alt C	Alt D	Alt E	Alt F	Alt G	Proposed Action + OCS Total (cumulative)	Alt C + OCS Total (cumulative)	Alt D + OCS Total (cumulative)	Alt E + OCS Total (cumulative)	Alt F + OCS Total (cumulative)	Alt G + OCS Total (cumulative)
Offshore export cable length (statute miles)	All	7,702	84	84 <sup>f</sup>	84 <sup>f</sup>	84 <sup>f</sup>	84 <sup>f</sup>	84 <sup>f</sup>	7,786	7,786 <sup>f</sup>	7,786 <sup>f</sup>	7,786 <sup>f</sup>	7,786 <sup>f</sup>	7,786 <sup>f</sup>
Inter-array cable and OSS-link cable length (statute miles) <sup>f</sup>	All	5,767	164	164 <sup>f</sup>	164 <sup>f</sup>	164 <sup>f</sup>	164 <sup>f</sup>	126	5,931	5,931 <sup>f</sup>	5,931 <sup>f</sup>	5,931 <sup>f</sup>	5,931 <sup>f</sup>	5,893
WTG number	Air	299	100	64–65	78–93	64 or 81	56	65	399	363–364	377–392	363 or 380	355	364
	Water	178	100	64–65	78–93	64 or 81	56	65	278	242–243	256–271	242 or 259	234	243
	Benthic/cultural resources (marine)	12	100	64–65	78–93	64 or 81	56	65	112	76–77	90–105	76 or 93	68	77
	Birds/bats/commercial fisheries/finfish-invertebrates-EFH/marine mammals/other marine uses (surveys)/sea turtles/land-use	3,025	100	64–65	78–93	64 or 81	56	65	3,125	3,089–3,090	3,103–3,118	3,089 or 3,106	3,081	3,090
	Navigation//other marine uses (excluding surveys)	998	100	64–65	78–93	64 or 81	56	65	1,098	1,062–1,063	1,076–1,091	1,062 or 1079	1,054	1,063
	Visual/recreation-tourism/cultural resources (viewshed)	876	100	64–65	78–93	64 or 81	56	65	980	940–941	954–969	940 or 957	932	941
	Demographics/environmental justice	3,025	100	64–65	78–93	64 or 81	56	65	3,125	3,089–3,090	3,103–3,118	3,089 or 3,106	3,081	3,090
Foundation number (WTG and OSS) <sup>f</sup>	Air	306	102	66–67	80–95	66 or 83	58	67	408	372–373	386–401	372 or 389	364	373
	Water	181	102	66–67	80–95	66 or 83	58	67	283	247–248	261–276	247 or 264	239	248
	Benthic/cultural resources (marine)	13	102	66–67	80–95	66 or 83	58	67	115	79–80	93–108	79 or 96	71	80
	Birds/bats/commercial fisheries/finfish-invertebrates-EFH/marine mammals/other marine uses (surveys)/sea turtles/land-use	3,088	102	66–67	80–95	66 or 83	58	67	3,190	3,154–3,155	3,168–3,183	3,154 or 3,171	3,146	3,155
	Navigation/other marine uses (excluding surveys)	1,015	102	66–67	80–95	66 or 83	58	67	1,117	1,081–1,082	1,095–1,110	1,081 or 1098	1,073	1,082
	Visual/recreation-tourism/cultural resources (viewshed)	893	102	66–67	80–95	66 or 83	58	67	995	959–960	973–988	959 or 976	951	960
	Demographics/environmental justice	3,088	102	66–67	80–95	66 or 83	58	67	3,190	3,154–3,155	3,168–3,183	3,154 or 3,171	3,146	3,155

Project Component	Geographic Analysis Area	OCS Total (without Proposed Action)*	Proposed Action	Alt C	Alt D	Alt E	Alt F	Alt G	Proposed Action + OCS Total (cumulative)	Alt C + OCS Total (cumulative)	Alt D + OCS Total (cumulative)	Alt E + OCS Total (cumulative)	Alt F + OCS Total (cumulative)	Alt G + OCS Total (cumulative)
Operation footprint of foundations (WTG and OSS)(acres) <sup>§1</sup>	Air	80	3	2	2–3	2	2	2	83	82	82–83	82	82	82
	Water	47	3	2	2–3	2	2	2	50	49	49–50	49	49	49
	Benthic/cultural resources (marine)	1	3	2	2–3	2	2	2	4	3	3–4	3	3	3
	Birds/bats/commercial fisheries/finfish-invertebrates-EFH/marine mammals/other marine uses (surveys)/sea turtles/land-use	564	3	2	2–3	2	2	2	567	566	566–567	566	566	566
	Navigation/other marine uses (excluding surveys)	264	3	2	2–3	2	2	2	267	266	266–267	266	266	266
	Visual/recreation-tourism/cultural resources (viewshed)	232	3	2	2–3	2	2	2	235	234	234–235	234	234	234
	Demographics/environmental justice	564	3	2	2–3	2	2	2	567	566	566–567	566	566	566
Construction footprint of foundations (WTG and OSS) (acres)	Air	Not available	3,172.2	2,065.8–2,097.1	2,504–2,973.5	2,065.8 or 2,597.9	1,815.4	2,097.1	Not available	Not available	Not available	Not available	Not available	Not available
	Water	Not available	3,172.2	2,065.8–2,097.1	2,504–2,973.5	2,065.8 or 2,597.9	1,815.4	2,097.1	Not available	Not available	Not available	Not available	Not available	Not available
	Benthic/cultural resources (marine)	Not available	3,172.2	2,065.8–2,097.1	2,504–2,973.5	2,065.8 or 2,597.9	1,815.4	2,097.1	Not available	Not available	Not available	Not available	Not available	Not available
	Birds/bats/commercial fisheries/finfish-invertebrates-EFH/marine mammals/other marine uses (surveys)/sea turtles/land-use	Not available	3,172.2	2,065.8–2,097.1	2,504–2,973.5	2,065.8 or 2,597.9	1,815.4	2,097.1	Not available	Not available	Not available	Not available	Not available	Not available
	Navigation/other marine uses (excluding surveys)	Not available	3,172.2	2,065.8–2,097.1	2,504–2,973.5	2,065.8 or 2,597.9	1,815.4	2,097.1	Not available	Not available	Not available	Not available	Not available	Not available
	Visual/recreation-tourism/cultural resources (viewshed)	Not available	3,172.2	2,065.8–2,097.1	2,504–2,973.5	2,065.8 or 2,597.9	1,815.4	2,097.1	Not available	Not available	Not available	Not available	Not available	Not available
	Demographics/environmental justice	Not available	3,172.2	2,065.8–2,097.1	2,504–2,973.5	2,065.8 or 2,597.9	1,815.4	2,097.1	Not available	Not available	Not available	Not available	Not available	Not available

Project Component	Geographic Analysis Area	OCS Total (without Proposed Action)*	Proposed Action	Alt C	Alt D	Alt E	Alt F	Alt G	Proposed Action + OCS Total (cumulative)	Alt C + OCS Total (cumulative)	Alt D + OCS Total (cumulative)	Alt E + OCS Total (cumulative)	Alt F + OCS Total (cumulative)	Alt G + OCS Total (cumulative)
Seabed disturbance based on addition of scour protection (foundation + scour protection) (acres) <sup>#</sup>	Air	386	71.4	46–47	56–67	46 or 58	41	47	457	432–433	442–453	432 or 444	427	433
	Water	228	71.4	46–47	56–67	46 or 58	41	47	299	274–275	284–295	274 or 286	269	275
	Benthic/cultural resources (marine)	11	71.4	46–47	56–67	46 or 58	41	47	82	57–58	67–78	57 or 69	52	58
	Birds/bats/commercial fisheries/finfish- invertebrates-EFH/marine mammals/other marine uses (surveys)/sea turtles/land- use	5,469	71.4	46–47	56–67	46 or 58	41	47	5,540.4	5,515–5,516	5,525–5,536	5,515 or 5,527	5,510	5,516
	Navigation/other marine uses (excluding surveys)	1,279	71.4	46–47	56–67	46 or 58	41	47	1,350	1,325–1,326	1,335–1,346	1,325 or 1,337	1,320	1,326
	Visual/recreation- tourism/cultural resources (viewshed)	1,125	71.4	46–47	56–67	46 or 58	41	47	1,197	1,171–1,172	1,181–1,192	1,171 or 1,183	1,166	1,172
	Demographics/environmental justice	5,469	71.4	46–47	56–67	46 or 58	41	47	5,540.4	5,515–5,516	5,525–5,536	5,515 or 5,527	5,510	5,516
Offshore export cable construction seabed disturbance (acres)**	Water	2,018	1,390	1,390 <sup>T</sup>	3,408	3,408 <sup>T</sup>	3,408 <sup>T</sup>	3,408 <sup>T</sup>	3,408 <sup>T</sup>	3,408 <sup>T</sup>				
	Benthic/cultural resources (marine)	555	1,390	1,390 <sup>T</sup>	1,945	1,945 <sup>T</sup>	1,945 <sup>T</sup>	1,945 <sup>T</sup>	1,945 <sup>T</sup>	1,945 <sup>T</sup>				
	Birds/bats/commercial fisheries/finfish- invertebrates-EFH/marine mammals/other marine uses (surveys)/sea turtles/land- use	32,377	1,390	1,390 <sup>T</sup>	33,767	33,767 <sup>T</sup>	33,767 <sup>T</sup>	33,767 <sup>T</sup>	33,767 <sup>T</sup>	33,767 <sup>T</sup>				
	Navigation/other marine uses (excluding surveys)	7,633	1,390	1,390 <sup>T</sup>	9,023 <sup>T</sup>	9,023 <sup>T</sup>	9,023 <sup>T</sup>	9,023 <sup>T</sup>	9,023 <sup>T</sup>	9,023 <sup>T</sup>				
	Visual/recreation- tourism/cultural resources (viewshed)	7,463	1,390	1,390 <sup>T</sup>	8,853	8,853 <sup>T</sup>	8,853 <sup>T</sup>	8,853 <sup>T</sup>	8,853 <sup>T</sup>	8,853 <sup>T</sup>				
	Demographics/environmental justice	32,377	1,390	1,390 <sup>T</sup>	33,767	33,767 <sup>T</sup>	33,767 <sup>T</sup>	33,767 <sup>T</sup>	33,767 <sup>T</sup>	33,767 <sup>T</sup>				

Project Component	Geographic Analysis Area	OCS Total (without Proposed Action)*	Proposed Action	Alt C	Alt D	Alt E	Alt F	Alt G	Proposed Action + OCS Total (cumulative)	Alt C + OCS Total (cumulative)	Alt D + OCS Total (cumulative)	Alt E + OCS Total (cumulative)	Alt F + OCS Total (cumulative)	Alt G + OCS Total (cumulative)
Offshore export cable hard protection (acres) <sup>††</sup>	Water	60	39.2	39.2 <sup>f</sup>	39.2 <sup>f</sup>	39.2 <sup>f</sup>	39.2 <sup>f</sup>	39.2 <sup>f</sup>	99.2	99.2 <sup>f</sup>	99.2 <sup>f</sup>	99.2 <sup>f</sup>	99.2 <sup>f</sup>	99.2 <sup>f</sup>
	Benthic/cultural resources (marine)	10	39.2	39.2 <sup>f</sup>	39.2 <sup>f</sup>	39.2 <sup>f</sup>	39.2 <sup>f</sup>	39.2 <sup>f</sup>	49.2	49.2 <sup>f</sup>	49.2 <sup>f</sup>	49.2 <sup>f</sup>	49.2 <sup>f</sup>	49.2 <sup>f</sup>
	Birds/bats/commercial fisheries/finfish-invertebrates-EFH/marine mammals/other marine uses (surveys)/sea turtles/land-use	1,584	39.2	39.2 <sup>f</sup>	39.2 <sup>f</sup>	39.2 <sup>f</sup>	39.2 <sup>f</sup>	39.2 <sup>f</sup>	1,623.2	1,623.2 <sup>f</sup>	1,623.2 <sup>f</sup>	1,623.2 <sup>f</sup>	1,623.2 <sup>f</sup>	1,623.2 <sup>f</sup>
	Navigation/other marine uses (excluding surveys)	543	39.2	39.2 <sup>f</sup>	39.2 <sup>f</sup>	39.2 <sup>f</sup>	39.2 <sup>f</sup>	39.2 <sup>f</sup>	582.2	582.2 <sup>f</sup>	582.2 <sup>f</sup>	582.2 <sup>f</sup>	582.2 <sup>f</sup>	582.2 <sup>f</sup>
	Visual/recreation-tourism/cultural resources (viewshed)	519	39.2	39.2 <sup>f</sup>	39.2 <sup>f</sup>	39.2 <sup>f</sup>	39.2 <sup>f</sup>	39.2 <sup>f</sup>	558.2	558.2 <sup>f</sup>	558.2 <sup>f</sup>	558.2 <sup>f</sup>	558.2 <sup>f</sup>	558.2 <sup>f</sup>
	Demographics/environmental justice	1,584	39.2	39.2 <sup>f</sup>	39.2 <sup>f</sup>	39.2 <sup>f</sup>	39.2 <sup>f</sup>	39.2 <sup>f</sup>	1,623.2	1,623.2 <sup>f</sup>	1,623.2 <sup>f</sup>	1,623.2 <sup>f</sup>	1,623.2 <sup>f</sup>	1,623.2 <sup>f</sup>
Anchoring disturbance (acres)	Water	1,862	3,204	2,066–2,098	2,510–2,985	2,066 or 2,605	1,812	2,098	5,066	3,928–3,960	4,372–4,847	3,928 or 4,467	3,674	3,960
	Benthic/cultural resources (marine)	821	3,204	2,066–2,098	2,510–2,985	2,066 or 2,605	1,812	2,098	4,025	2,887–2,919	3,331–3,806	2,887 or 3,426	2,633	2,919
	Birds/bats/commercial fisheries/finfish-invertebrates-EFH/marine mammals/other marine uses (surveys)/sea turtles/land-use	8,427	3,204	2,066–2,098	2,510–2,985	2,066 or 2,605	1,812	2,098	11,631	10,493–10,525	10,937–11,412	10,493 or 11,032	10,239	10,525
	Navigation/other marine uses (excluding surveys)	3,848	3,204	2,066–2,098	2,510–2,985	2,066 or 2,605	1,812	2,098	7,052	5,914–5,946	6,358–6,833	5,914 or 6,453	5,660	5,946
	Visual/recreation-tourism/cultural resources (viewshed)	3,346	3,204	2,066–2,098	2,510–2,985	2,066 or 2,605	1,812	2,098	6,550	5,412–5,444	5,856–6,331	5,412 or 5,951	5,158	5,444
	Demographics/environmental justice	8,427	3,204	2,066–2,098	2,510–2,985	2,066 or 2,605	1,812	2,098	11,631	10,493–10,525	109,37–11,412	104,93 or 11,032	10,239	10,525
Inter-array cable and OSS-link cable construction seabed disturbance (acres) <sup>#‡</sup>	Water	4,131	2,619	2,619 <sup>f</sup>	2,619 <sup>f</sup>	2,619 <sup>f</sup>	2,619 <sup>f</sup>	2,010	6,750	6,750 <sup>f</sup>	6,750 <sup>f</sup>	6,750 <sup>f</sup>	6,750 <sup>f</sup>	6,141
	Benthic/cultural resources (marine)	340	2,619	2,619 <sup>f</sup>	2,619 <sup>f</sup>	2,619 <sup>f</sup>	2,619 <sup>f</sup>	2,010	2,959	2,959 <sup>f</sup>	2,959 <sup>f</sup>	2,959 <sup>f</sup>	2,959 <sup>f</sup>	2,350

Project Component	Geographic Analysis Area	OCS Total (without Proposed Action)*	Proposed Action	Alt C	Alt D	Alt E	Alt F	Alt G	Proposed Action + OCS Total (cumulative)	Alt C + OCS Total (cumulative)	Alt D + OCS Total (cumulative)	Alt E + OCS Total (cumulative)	Alt F + OCS Total (cumulative)	Alt G + OCS Total (cumulative)
Inter-array cable and OSS-link cable hard protection (acres) <sup>§§</sup>	Birds/bats/commercial fisheries/finfish-invertebrates-EFH/marine mammals/other marine uses (surveys)/sea turtles/land-use	69,004	2,619	2,619 <sup>f</sup>	2,619 <sup>f</sup>	2,619 <sup>f</sup>	2,619 <sup>f</sup>	2,010	71,623	71,623 <sup>f</sup>	71,623 <sup>f</sup>	71,623 <sup>f</sup>	71,623 <sup>f</sup>	71,014
	Navigation/other marine uses (excluding surveys)	8,495	2,619	2,619 <sup>f</sup>	2,619 <sup>f</sup>	2,619 <sup>f</sup>	2,619 <sup>f</sup>	2,010	8,944	8,944 <sup>f</sup>	8,944 <sup>f</sup>	8,944 <sup>f</sup>	8,944 <sup>f</sup>	8,335
	Visual/recreation-tourism/cultural resources (viewshed)	7,523	2,619	2,619 <sup>f</sup>	2,619 <sup>f</sup>	2,619 <sup>f</sup>	2,619 <sup>f</sup>	2,010	10,142	10,142 <sup>f</sup>	10,142 <sup>f</sup>	10,142 <sup>f</sup>	10,142 <sup>f</sup>	9,533
	Demographics/environmental justice	69,004	2,619	2,619 <sup>f</sup>	2,619 <sup>f</sup>	2,619 <sup>f</sup>	2,619 <sup>f</sup>	2,010	71,623	71,623 <sup>f</sup>	71,623 <sup>f</sup>	71,623 <sup>f</sup>	71,623 <sup>f</sup>	71,014
Total hazardous fluids (WTG and OSS) (gallons) <sup>***</sup>	Water	444	78.5	78.5 <sup>f</sup>	78.5 <sup>f</sup>	78.5 <sup>f</sup>	78.5 <sup>f</sup>	60.3	522.5	522.5 <sup>f</sup>	522.5 <sup>f</sup>	522.5 <sup>f</sup>	522.5 <sup>f</sup>	504
	Benthic/cultural resources (marine)	10	78.5	78.5 <sup>f</sup>	78.5 <sup>f</sup>	78.5 <sup>f</sup>	78.5 <sup>f</sup>	60.3	88.5	88.5 <sup>f</sup>	88.5 <sup>f</sup>	88.5 <sup>f</sup>	88.5 <sup>f</sup>	70.3
	Birds/bats/commercial fisheries/finfish-invertebrates-EFH/marine mammals/other marine uses (surveys)/sea turtles/land-use	1,232	78.5	78.5 <sup>f</sup>	78.5 <sup>f</sup>	78.5 <sup>f</sup>	78.5 <sup>f</sup>	60.3	1,435.5	1,310.5 <sup>f</sup>	1,310.5 <sup>f</sup>	1,310.5 <sup>f</sup>	1,310.5 <sup>f</sup>	1292.3
	Navigation/other marine uses (excluding surveys)	629	78.5	78.5 <sup>f</sup>	78.5 <sup>f</sup>	78.5 <sup>f</sup>	78.5 <sup>f</sup>	60.3	707.5	707.5 <sup>f</sup>	707.5 <sup>f</sup>	707.5 <sup>f</sup>	707.5 <sup>f</sup>	689.3
	Visual/recreation-tourism/cultural resources (viewshed)	629	78.5	78.5 <sup>f</sup>	78.5 <sup>f</sup>	78.5 <sup>f</sup>	78.5 <sup>f</sup>	60.3	707.5	707.5 <sup>f</sup>	707.5 <sup>f</sup>	707.5 <sup>f</sup>	707.5 <sup>f</sup>	689.3
	Demographics/environmental justice	1,232	78.5	78.5 <sup>f</sup>	78.5 <sup>f</sup>	78.5 <sup>f</sup>	78.5 <sup>f</sup>	60.3	1,435.5	1,310.5 <sup>f</sup>	1,310.5 <sup>f</sup>	1,310.5 <sup>f</sup>	1,310.5 <sup>f</sup>	1292.3

Project Component	Geographic Analysis Area	OCS Total (without Proposed Action)*	Proposed Action	Alt C	Alt D	Alt E	Alt F	Alt G	Proposed Action + OCS Total (cumulative)	Alt C + OCS Total (cumulative)	Alt D + OCS Total (cumulative)	Alt E + OCS Total (cumulative)	Alt F + OCS Total (cumulative)	Alt G + OCS Total (cumulative)
(surveys)/sea turtles/land-use														
	Navigation/other marine uses (excluding surveys)	14,231,132	585,200	468,856–473,060	514,712–562,772	468,856 or 524,324	444,224	473,060	14,816,332	14,699,988–14,704,192	14,745,844–14,793,904	14,699,988 or 14,755,456	14,675,356	14,704,192
	Visual/recreation-tourism/cultural resources (viewshed)	12,453,920	585,200	468,856–473,060	514,712–562,772	468,856 or 524,324	444,224	473,060	13,039,120	12,922,776–12,926,980	12,968,632–13,016,692	12,922,776 or 12,978,244	12,898,144	12,926,980
	Demographics/environmental justice	33,869,870	585,200	468,856–473,060	514,712–562,772	468,856 or 524,324	444,224	473,060	34,455,070	34,338,726–34,342,930	34,384,582–34,432,642	34,338,726 or 34,394,194	34,314,094	34,342,930

\* Totals provided in Appendix E3 and summarized here.

† Sums total IAC and OSS-Link cable length by alternative, as disclosed in Section 2.1.

‡ Sums total WTGs and OSSs by alternative, as disclosed in Section 2.1.

§ Sums OSS monopile foundation (0.043 acre/foundation) and WTG monopile foundation (0.027 acre/foundation) by alternative, as disclosed in Section 2.1.

¶ Sums OSS monopile foundation (7.2 acres/foundation) and WTG monopile foundation (7.2 acres/foundation) by alternative, as disclosed in Section 2.1.

# Sums WTG monopile scour protection (0.67 acre/foundation) and OSS monopile scour protection (0.66 acres/foundation) by alternative, as disclosed in Section 2.1.

\*\* Sums RWEC-OCS and RWEC-RI construction and installation footprint by alternative, as disclosed in Section 2.1.

†† Sums RWEC-OCS and RWEC-RI operation footprint by alternative, as disclosed in Section 2.1.

‡‡ Sums IAC and OSS-link construction and installation footprint by alternative, as disclosed in Section 2.1.

§§ Sums IAC and OSS-link operation footprint by alternative, as disclosed in Section 2.1.

\*\*\* Totals provided in Appendix E3 and summarized here.

††† Project design has not occurred for Alternatives C through F; therefore, GIS calculations for the IAC, OSS-link cable, and RWEC are not available. This table uses the Proposed Action as the most conservative proxy estimate. However, best professional judgment suggests that the footprint of the IAC, OSS-link cable, and RWEC would change and be slightly reduced to match the reduced number of WTGs under Alternatives C through F.

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