

# Updates due to BOEM Lease Area changes

Boardwalk Power Portfolio

## PROJECT OVERVIEW

**This document describes updates to the Boardwalk Power Portfolio submitted in response to the New Jersey State Agreement Approach Offshore Transmission Solicitation, to accommodate changes in the offshore Lease Areas since submission.**

## 1. Executive summary

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Anbaric proposes updates to the Boardwalk Power Portfolio submitted as part of the New Jersey State Agreement Approach Offshore Transmission Solicitation. The updates are necessary to accommodate changes in the BOEM Lease Areas which were made since the SAA submission. Due to the inherently flexible nature of Anbaric's proposed technology solution, the changes are limited to different offshore substation platform locations and offshore interlinks. The resulting differences in submarine cable lengths and support structures lead to an overall reduction in the cost of the proposals. The changes do not affect any of the onshore elements of the Boardwalk Power Portfolio.

## 2. Introduction

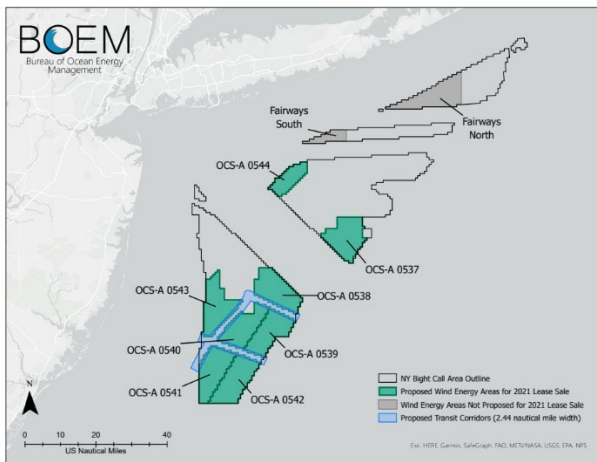
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Anbaric Development Partners, LLC (ADP) submitted its Boardwalk Power Portfolio projects in response to the New Jersey Board of Public Utilities (NJBPU) and PJM State Agreement Approach (SAA) Offshore Transmission Solicitation on 17 September 2021. The Boardwalk Power Portfolio design is based on the locations and sizes of the Hudson South Wind Energy Areas (WEAs) as defined by Bureau of Ocean Energy Management (BOEM) on the 14 June 2021. Since then, the exact borders of the WEAs have changed and were finalized in the Final Sales Notice (FSN) on 23 February 2022. This document describes the impact of the differences between the WEAs and the FSN on Anbaric's Boardwalk Power Portfolio.

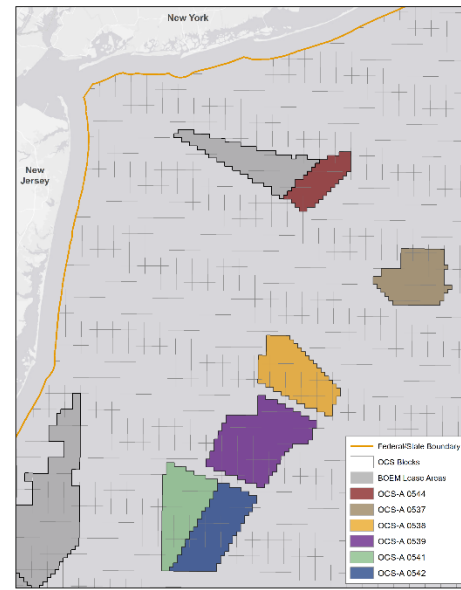
## 3. Change in lease area definitions

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The difference between the WEAs and the FSN is illustrated in Figure 1. From this figure it is apparent that the number of WEAs has reduced from eight (8) to six (6), and that the available areas have changed. WEA OCS-A-0543 has been removed, WEAs OCS-A-0539 and OCS-A-0540 have been merged and reduced in size, and WEAs OCS-A-0541 and OCS-A-0542 have slightly reduced in available area. WEA OCS-A-0538 has remained unchanged.



a) Wind energy areas (06-14-2021)



b) Final sales notice (02-23-2022)

Figure 1 – Difference in project areas

## 4. Updates to Boardwalk Power Portfolio

The change in the Lease Area definitions impacts the following aspects of Anbaric's design:

- Potential project capacity
- Offshore wind farm areas to be connected
- Offshore substation platform locations
- Export cable length and platform interlink length
- Development pathways

Anbaric proposes several updates to the original project proposals to address these aspects which will be discussed separately in the remainder of this document.

It is to be noted that the updates do not have any impact on any of the onshore parts of the Boardwalk Power Portfolio.

## POTENTIAL PROJECT CAPACITY

The change in available area results in a change in the potential project capacity. Assuming a wind turbine generator (WTG) capacity of 15 – 18 MW, and a WTG spacing of 1 nm x 1 nm, Table 1 shows the change in potential project capacities (difference in red).

Table 1 – Changes in potential project capacity

Wind Energy Areas (WEAs) as defined by BOEM on 14 June 2021						
Name	Hudson South A	Hudson South B	Hudson South C	Hudson South D	Hudson South E	Hudson South F
Lease ID OCS-A-	0543	0538	0539	0540	0541	0542
Size (km <sup>2</sup> )	347	341	324	308	343	356
# of WTGs	90	93	75	77	93	105
<b>Capacity (MW)</b>	<b>1,350 to 1,620</b>	<b>1,395 to 1,674</b>	<b>1,125 to 1,350</b>	<b>1,155 to 1,386</b>	<b>1,395 to 1,674</b>	<b>1,575 to 1,890</b>
Final Sales Notice on 23 February 2022						
Name	Hudson South A	Hudson South B	Hudson South C & D	Hudson South E	Hudson South F	
Lease ID OCS-A-	Removed	0538	0539	0541	0542	
Size (km <sup>2</sup> )		341	510 (-122)	321 (-22)	340 (-16)	
# of WTGs		93	123 (-29)	87 (-6)	100 (-5)	
<b>Capacity (MW)</b>		<b>1,395 to 1,674</b>	<b>1,850 to 2,219</b> <b>(-430 to -517)</b>	<b>1,306 to 1,567</b> <b>(-89 to -107)</b>	<b>1,504 to 1,805</b> <b>(-71 to -85)</b>	

It follows that, with the exception of Hudson South A, C and D, the potential capacities of the WEAs have remained mostly unchanged or have reduced somewhat. This means that the Standard Design approach proposed by Anbaric can be readily applied to the Lease Areas Hudson South B, E and F. For Hudson South C and D, a parallel combination of two links based on the Standard Design would have to be used. The total wind capacity available between all Hudson South Lease Areas is 6,055 MW – 7,265 MW.

## OFFSHORE WIND FARM AREAS TO BE CONNECTED

Offshore grid design should strive to minimize the number and total length of cables, as this directly reduces CAPEX, environmental impact, unavailability, and losses. This is achieved by maximally

increasing the capacities of the export circuits, to the lesser of the onshore maximum loss of infeed or the limit of state-of-the-art cable technology.

The maximum possible export link capacity from a technology perspective is around 2.4 GW based on 525 kV HVDC bipole technology. Hence, the most effective way to connect the 6,055 MW – 7,265 MW total of all potential Hudson South Lease Area capacities to shore, would be to use 3 offshore converter stations rated at 2 – 2.4 GW each.

However, in New Jersey, the limit is dictated by the PJM maximum loss of infeed limit of ~1,500 MW. Hence, the most practical way to connect the 6,055 MW – 7,265 MW total of all potential Hudson South Lease Area capacities to shore, would be to use 4 to 5 offshore converter stations rated at about 1,500 MW each based on the Design Standard proposed by Anbaric. However, by dimensioning the export circuit capacity based on the maximum loss of infeed, it is:

- Decoupled from the potential capacity of the Lease Area
- Decoupled from the capacities of the upcoming offshore wind solicitations
- Potentially shared between more than one Lease Area

Furthermore, to optimize offshore wind farm array cable layout, the offshore converter stations should ideally be placed within the Lease Areas. Achieving this will require strong interregional coordination between offshore transmission planning, transmission governance, and offshore wind solicitations, and may not be feasible in the short term.

To ensure New Jersey can reach its offshore wind targets by 2030 and beyond, the Boardwalk Power Portfolio aims to provide flexible, eminently constructable, effective, and reliable transmission solutions. The solutions optimally leverage the benefits of multi-terminal HVDC technology whilst enabling practical transmission planning. This means:

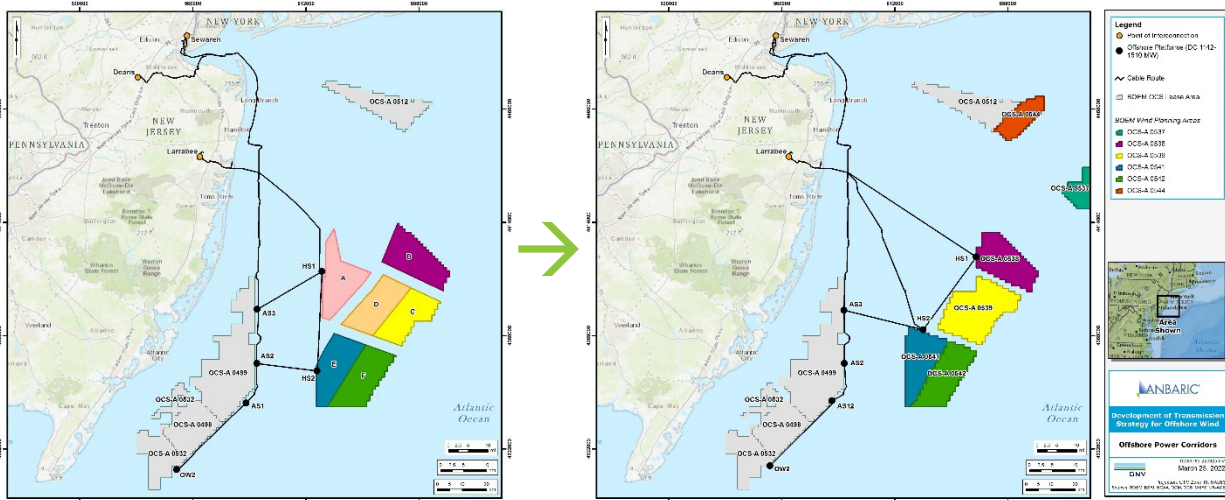
- one export link per offshore wind farm
- the export link capacity does not exceed the maximum loss of infeed of 1,500 MW
- the export link capacity is based on the New Jersey BPU offshore wind solicitation capacities
- offshore HVDC platform interlinks are created to improve availability, where sensible

These same principles have been applied to the changed Lease Area definitions to determine an updated portfolio topology. This results in three changes to the originally submitted design:

- The original Boardwalk Power Portfolio contained transmission solutions to export the wind energy of a wind farm built in Hudson South WEA **A** (OCS-A-0543, referred to as Hudson South 1 in Anbaric's proposals). Now that WEA is removed in the FSN, Anbaric proposes to move the location of the original 'HS1' offshore substation to connect to a wind farm built in the Hudson South WEA **B** (OCS-A-0538). The lease areas have comparable potential capacities, so no impact on the platform design is expected.

- In order to enable cost-effective Option 3 links (platform interlinks), Anbaric proposes to move the location of the ‘HS2’ offshore substation which connects Hudson South WEA E (OCS-A-0541) from the western edge of the lease area to the northern edge.
- As a result of the changed platform locations, Anbaric proposes:
  - to remove the platform interlink between offshore substations ‘HS1’ and ‘AS3’ by withdrawing proposal 3.2
  - to create a platform interlink between offshore substations ‘HS2 and ‘AS3’ by modifying the original proposal 3.3.

These changes have been illustrated in Figure 2.



a) Original design

b) Updated design

*Figure 2 – Updated Boardwalk Power Portfolio design*

The changes affect all Boardwalk Power Portfolio proposals that connect to either ‘HS1’ or ‘HS2’ or both, as shown by the red lines in Table 2.

Table 2 – Boardwalk Power Portfolio Proposals affected by changes in lease areas

Project Name	OSP(s)	POI	Total DC Cable Length	Rated Voltage DC	Capacity
Option 2.1	Hudson South 1	Deans	101.1 mi (162.7 km)	400 kV	1400 MW
Option 2.2	Hudson South 2	Deans	126.2 mi (203.1 km)	400 kV	1400 MW
Option 2.3	Atlantic Shores 3	Deans	104.2 mi (167.7 km)	400 kV	1400 MW
Option 2.4	Hudson South 2	Sewaren	114.5 mi (184.3 km)	400 kV	1400 MW
Option 2.5	Atlantic Shores 3	Sewaren	92.5 mi (148.8 km)	400 kV	1400 MW
Option 2.6	Atlantic Shores 2	Larrabee	57.7 mi (107.9 km)	400 kV	1200 MW
Option 2.7	Atlantic Shores 2	Larrabee	57.7 mi (107.9 km)	400 kV	1400 MW
Option 2.8	Ocean Wind 2	Deans	154.2 mi (248.1 km)	400 kV	1148 MW
Option 2.9*	Ocean Wind 2	Deans	154.2 mi (248.1 km)	320 kV	1148 MW
Option 2.10	Atlantic Shores 1	Deans	129.8 mi (208.8 km)	400 kV	1510 MW
Option 2.11**	Hudson South 2	Sewaren	112.4 mi (181.0 km)	400 kV	1400 MW
Option 2.12***	Atlantic Shores 3	Sewaren	90.4 mi (145.5 km)	400 kV	1400 MW
Option 3.1	Hudson South 1 to Hudson South 2	-	25.1 mi (40.4 km)	-	700 MW
Option 3.2	Hudson South 1 to Atlantic Shores 3	-	19.1 mi (30.8 km)	-	700 MW
Option 3.3	Hudson South 2 to Atlantic Shores 2	-	15.4 mi (24.8 km)	-	700 MW
Option 3.4	Atlantic Shores 2 to Atlantic Shores 3	-	14.6 mi (23.4 km)	-	700 MW
Option 3.5	Atlantic Shores 2 to Ocean Wind 2	-	35.4 mi (57.0 km)	-	700 MW
Option 3.6	Ocean Wind 2 to Atlantic Shores 1	-	24.3 mi (39.1 km)	-	700 MW
Option 3.7	Atlantic Shores 2 to Atlantic Shores 1	-	11.1 mi (17.9 km)	-	700 MW

It is to be noted that the Boardwalk Power Portfolio can be readily extended to connect a future wind farm in lease area OCS-A-0542 by applying the proposed Design Standard.

**OFFSHORE SUBSTATION PLATFORM LOCATIONS**

The updated offshore substation platform coordinates and water depths based on the new offshore substation platform locations are shown in Table 3:

*Table 3 – Changes in offshore substation platform locations*

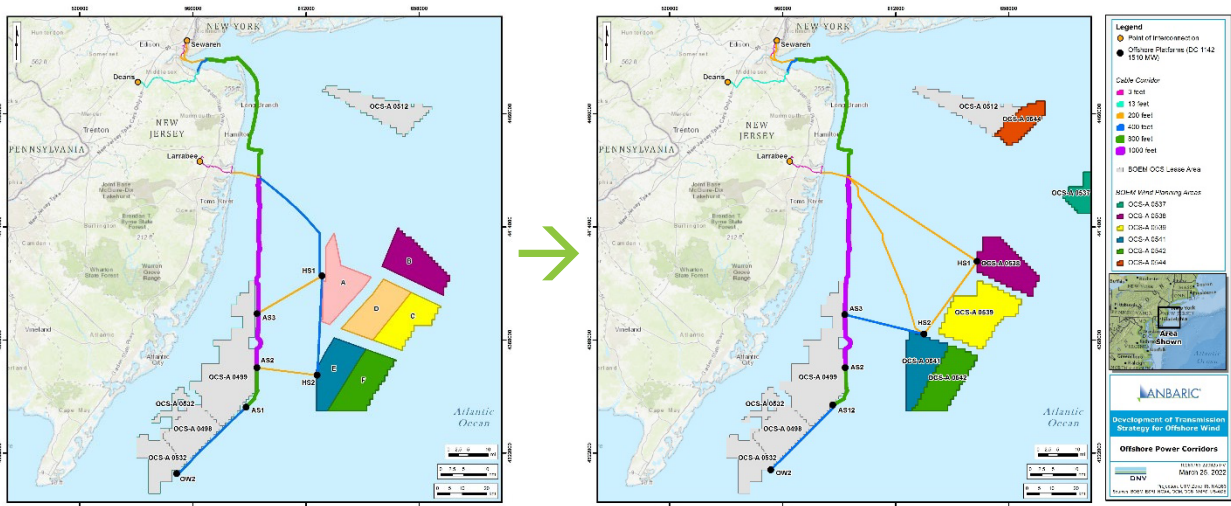
Name	Lease area		OSP coordinates		Depth below sea level (m)	
	Original	New	Original	New	Original	New
OW2	OCS-A-532		-74.313211 W 38.969266 N		-32.9	
AS1	OCS-A-499		-74.0383 W 39.167332 N		-28.4	
AS2	OCS-A-499		-73.931334 W 39.355037 N		-27.9	
AS3	OCS-A-499		-73.927171 W 39.55272 N		-26.0	
HS1	OCS-A-543	OCS-A-538	-73.617046 W 39.688174 N	-73.305482 W 39.737367 N	-36.0	-40.0
HS2	OCS-A-541		-73.646942 W 39.32452 N	-73.562997 W 39.474319 N	-41.8	-34.7

The different offshore substation platform locations have different water depths which means that the support structure designs have to be adapted accordingly. Support structure CAPEX is largely proportional to water depth. Since the increase in water depth for ‘HS1’ is smaller than the decrease in water depth for ‘HS2’, the combined CAPEX for both offshore substation platforms will reduce.



## SUBMARINE CABLE CORRIDORS

Due to the change in offshore substation platform locations and interlinks, the submarine cable corridors have also been updated, as illustrated in Figure 3.



a) Original design

b) Updated design

*Figure 3 – Offshore cable corridor widths*

It can be seen that an additional corridor is added from 'HS2' to achieve the shortest possible cable route. Anbaric has carried out a high-level GIS-based constraints analysis to confirm the constructability of the proposed corridors. Due to the additional corridor, the number of circuits in each corridor is updated as indicated by the color coding which illustrates the corridor width at different sections.

### SUBMARINE CABLE LENGTHS

The change in offshore platform locations leads to a change in the submarine export cable length of the Boardwalk Power Portfolio proposals for offshore substation platforms ‘HS1’ and ‘HS2’. Anbaric has carried out a high-level constraints analysis to determine the difference.

*Table 4 – Changes in submarine cable lengths*

Project Name	POI	OSP(s)		Total DC Cable Length	
		Original	New	Original	New
Option 2.1	Deans	Hudson South 1		101.1 mi (162.7 km)	87.0 mi (140.0 km)
Option 2.2	Deans	Hudson South 2		126.2 mi (203.1 km)	93.3 mi (150.1 km)
Option 2.4	Sewaren	Hudson South 2		114.5 mi (184.3 km)	96.5 mi (155.3 km)
Option 2.11	Sewaren	Hudson South 2		112.4 mi (181.0 km)	104.1 mi (167.5 km)
Option 3.1	-	Hudson South 1 to Hudson South 2		25.1 mi (40.4 km)	22.7 mi (36.6 km)
<del>Option 3.2</del>	-	<del>Hudson South 1 to Atlantic Shores 3</del>	removed	<del>49.1 mi (30.8 km)</del>	-
Option 3.3	-	Hudson South 2 to Atlantic Shores 2	Hudson South 2 to Atlantic Shores 3	15.4 mi (24.8 km)	20.6 mi (33.2 km)

It can be seen that, with the exception of Option 3.3, the cable lengths of the updated proposals reduce compared to the original proposals. This means that the associated CAPEX, unavailability, losses, and environmental impact reduce as well.

### DEVELOPMENT PATHWAYS

The change in the Option 3 proposals in the Boardwalk Power Portfolio affects the Development Pathways described in chapter 12 of the analysis report. Pathways 1-4, which include the use of Option 3.1 – 3.3, need to be updated as illustrated by the red text in Table 5. The updates do not lead to a change in total offshore wind power injection or in the deployment sequence.

Table 5 – Updated Overview of Development Pathways

Commercial operation date		2024 1 <sup>st</sup> offshore wind solicitation	2027-2029 2 <sup>nd</sup> offshore wind solicitation	2030 3 <sup>rd</sup> offshore wind solicitation	2031 4 <sup>th</sup> offshore wind solicitation	2033 5 <sup>th</sup> offshore wind solicitation	2033+	Total offshore wind power injection (MW)	Corresponding Onshore POI Power Injection Scenario
<b>Pathway 1</b>									
Pathway P1.a	Expansion	OW1 → - Oyster Creek - BL England	OW2 → Smithburg AS1 → Cardiff	Option 2.6 AS2 → Larrabee	Option 2.1 HS1→Deans	Option 2.2 HS2 → Deans	Platform interlinks: Option 3.1: HS2 → HS1 Option: 3.3 <b>AS3</b> → HS2 Option: 3.5 OW2→AS2		
	Rating (MW)	816	<b>1,300</b>	<b>1,200</b>	<b>1,400</b>	<b>1,400</b>	<b>700</b>	<b>8,057.6</b>	<b>Scenario A1</b>
		432	<b>1,510</b>				<b>700</b>		
Pathway P1.b	Expansion	OW1→ - Oyster Creek - BL England	OW2 → Smithburg AS1 → Cardiff	Option 2.7 AS2 → Larrabee	Option 2.1 HS1→Deans	Option 2.2 HS2 --> Deans	Platform interlinks: Option 3.1: HS2 → HS1 Option: 3.3 <b>AS3</b> → HS2 Option: 3.5 OW2→AS2		
	Rating (MW)	816	<b>1,300</b>	<b>1,400</b>	<b>1,400</b>	<b>1,400</b>	<b>700</b>	<b>8,257.6</b>	<b>Scenario A8</b>
		432	<b>1,510</b>				<b>700</b>		
Pathway P1.c	Expansion	OW1 → - Oyster Creek - BL England	OW2 → Smithburg AS1 → Cardiff	Option 2.6 AS2 → Larrabee	Option 2.1 HS1→Deans	Option 2.2 HS2 → Deans			
	Rating (MW)	816	<b>1,300</b>	<b>1,200</b>	<b>1,400</b>	<b>1,400</b>		<b>8,057.6</b>	<b>Scenario A1</b>
		432	<b>1,510</b>						

Commercial operation date		2024 1 <sup>st</sup> offshore wind solicitation	2027-2029 2 <sup>nd</sup> offshore wind solicitation	2030 3 <sup>rd</sup> offshore wind solicitation	2031 4 <sup>th</sup> offshore wind solicitation	2033 5 <sup>th</sup> offshore wind solicitation	2033+	Total offshore wind power injection (MW)	Corresponding Onshore POI Power Injection Scenario
Pathway P1.d	Expansion	OW1 --> - Oyster Creek - BL England	OW2 --> Smithburg AS1 --> Cardiff	Option 2.7 AS2 --> Larrabee	Option 2.1 HS1-->>Deans	Option 2.2 HS2 --> Deans			
		816	<b>1,300</b>	<b>1,400</b>	<b>1,400</b>	<b>1,400</b>		<b>8,257.6</b>	<b>Scenario A8</b>
		432	<b>1,510</b>						
<b>Pathway 2</b>									
Pathway P2.a	Expansion	OW1 --> - Oyster Creek - BL England	OW2 --> Smithburg AS1 --> Cardiff	Option 2.6 AS2 --> Larrabee	Option 2.1 HS1-->>Deans	Option 2.4/2.11 HS2 --> Sewaren	Platform interlinks: Option 3.1: HS2 --> HS1 Option: 3.3 <b>AS3</b> --> HS2 Option: 3.5 OW2-->AS2		
	Rating (MW)	816	<b>1,300</b>	<b>1,200</b>	<b>1,400</b>	<b>1,400</b>	<b>700</b>	<b>8,057.6</b>	<b>Scenario A4</b>
		432	<b>1,510</b>						
Pathway P2.b	Expansion	OW1 --> - Oyster Creek - BL England	OW2 --> Smithburg AS1 --> Cardiff	Option 2.7 AS2 --> Larrabee	Option 2.1 HS1-->>Deans	Option 2.4/2.11 HS2 --> Sewaren	Platform interlinks: Option 3.1: HS2 --> HS1 Option: 3.3 <b>AS3</b> --> HS2 Option: 3.5 OW2-->AS2		
	Rating (MW)	816	<b>1,300</b>	<b>1,400</b>	<b>1,400</b>	<b>1,400</b>	<b>700</b>	<b>8,257.6</b>	<b>Scenario A10</b>
		432	<b>1,510</b>						

Commercial operation date		2024 1 <sup>st</sup> offshore wind solicitation	2027-2029 2 <sup>nd</sup> offshore wind solicitation	2030 3 <sup>rd</sup> offshore wind solicitation	2031 4 <sup>th</sup> offshore wind solicitation	2033 5 <sup>th</sup> offshore wind solicitation	2033+	Total offshore wind power injection (MW)	Corresponding Onshore POI Power Injection Scenario
Pathway P2.c	Expansion	OW1 --> - Oyster Creek - BL England	OW2 --> Smithburg AS1 --> Cardiff	Option 2.6 AS2 --> Larrabee	Option 2.1 HS1-->>Deans	Option 2.4/2.11 HS2 --> Sewaren			
	Rating (MW)	816	<b>1,300</b>	<b>1,200</b>	<b>1,400</b>	<b>1,400</b>		<b>8,057.6</b>	<b>Scenario A4</b>
		432	<b>1,510</b>						
Pathway P2.d	Expansion	OW1 → - Oyster Creek - BL England	OW2 → Smithburg AS1 → Cardiff	Option 2.7 AS2 --> Larrabee	Option 2.1 HS1-->>Deans	Option 2.4/2.11 HS2 --> Sewaren			
	Rating (MW)	816	<b>1,300</b>	<b>1,400</b>	<b>1,400</b>	<b>1,400</b>		<b>8,257.6</b>	<b>Scenario A10</b>
		432	<b>1,510</b>						
<b>Pathway 3</b>									
Pathway P3.a	Expansion	OW1 → - Oyster Creek - BL England	OW2 → Smithburg AS1 → Cardiff	Option 2.6 AS2 --> Larrabee	Option 2.1 HS1-->>Deans	Option 2.3 AS3 --> Deans	Platform interlinks: <del>Option 3.2: HS1--&gt; AS3</del> Option 3.4: AS2 --> AS3 Option 3.5: OW2-->AS2		
	Rating (MW)	816	<b>1,300</b>	<b>1,200</b>	<b>1,400</b>	<b>1,400</b>	<b>700</b>	<b>8,057.6</b>	<b>Scenario A1</b>
		432	<b>1,510</b>						

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Pathway P3.b	Expansion	OW1 --> - Oyster Creek - BL England	OW2 --> Smithburg AS1 --> Cardiff	Option 2.7 AS2 --> Larrabee	Option 2.1 HS1-->>Deans	Option 2.3 AS3 --> Deans	Platform interlinks: <del>Option 3.2: HS1--&gt;&gt; AS3</del> Option 3.4: AS2 --> AS3 Option 3.5: OW2-->AS2		
	Rating (MW)	816	<b>1,300</b>	<b>1,400</b>	<b>1,400</b>	<b>1,400</b>	<b>700</b>	<b>8,257.6</b>	<b>Scenario A8</b>
		432	<b>1,510</b>						
Pathway P3.c	Expansion	OW1 --> - Oyster Creek - BL England	OW2 --> Smithburg AS1 --> Cardiff	Option 2.6 AS2 --> Larrabee	Option 2.1 HS1-->>Deans	Option 2.3 AS3 --> Deans			
	Rating (MW)	816	<b>1,300</b>	<b>1,200</b>	<b>1,400</b>	<b>1,400</b>		<b>8,057.6</b>	<b>Scenario A1</b>
		432	<b>1,510</b>						
Pathway P3.d	Expansion	OW1 --> - Oyster Creek - BL England	OW2 --> Smithburg AS1 --> Cardiff	Option 2.7 AS2 --> Larrabee	Option 2.1 HS1-->>Deans	Option 2.3 AS3 --> Deans			
	Rating (MW)	816	<b>1,300</b>	<b>1,400</b>	<b>1,400</b>	<b>1,400</b>		<b>8,257.6</b>	<b>Scenario A8</b>
		432	<b>1,510</b>						

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<b>Pathway 4</b>									
Pathway P4.a	Expansion	OW1 --> - Oyster Creek - BL England	OW2 --> Smithburg AS1 --> Cardiff	Option 2.6 AS2 --> Larrabee	Option 2.1 HS1-->>Deans	Option 2.5/2.12 AS3 --> Sewaren	Platform interlinks: <del>Option 3.2: HS1 --&gt; AS3</del> Option 3.4: AS2 --> AS3 Option 3.5: AS2-->OW2		
	Rating (MW)	816	<b>1,300</b>	<b>1,200</b>	<b>1,400</b>	<b>1,400</b>	<b>700</b>	<b>8,057.6</b>	<b>Scenario A4</b>
		432	<b>1,510</b>						
Pathway P4.b	Expansion	OW1 --> - Oyster Creek - BL England	OW2 --> Smithburg AS1 --> Cardiff	Option 2.7 AS2 --> Larrabee	Option 2.1 HS1-->>Deans	Option 2.5/2.12 AS3 --> Sewaren	Platform interlinks: <del>Option 3.2: HS1 --&gt; AS3</del> Option 3.4: AS2 --> AS3 Option 3.5: AS2-->OW2		
	Rating (MW)	816	<b>1,300</b>	<b>1,400</b>	<b>1,400</b>	<b>1,400</b>	<b>700</b>	<b>8,257.6</b>	<b>Scenario A10</b>
		432	<b>1,510</b>						
Pathway P4.c	Expansion	OW1 --> - Oyster Creek - BL England	OW2 --> Smithburg AS1 --> Cardiff	Option 2.6 AS2 --> Larrabee	Option 2.1 HS1-->>Deans	Option 2.5/2.12 AS3 --> Sewaren			
	Rating (MW)	816	<b>1,300</b>	<b>1,200</b>	<b>1,400</b>	<b>1,400</b>		<b>8,057.6</b>	<b>Scenario A4</b>
		432	<b>1,510</b>						

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Pathway P4.d	Expansion	OW1 --> - Oyster Creek - BL England	OW2 --> Smithburg AS1 --> Cardiff	Option 2.7 AS2 --> Larrabee	Option 2.1 HS1-->>Deans	Option 2.5/2.12 AS3 --> Sewaren			
	Rating (MW)	816	<b>1,300</b>	<b>1,400</b>	<b>1,400</b>	<b>1,400</b>		<b>8,257.6</b>	<b>Scenario A10</b>
		432	<b>1,510</b>						
<b>Pathway 5</b>									
Pathway P5.a	Expansion	OW1 --> - Oyster Creek - BL England	Option 2.8 OW2 --> Deans Option 2.10 AS1 --> Deans	Option 2.6 AS2 --> Larrabee	AS3 --> Cardiff*	Option 2.4/2.11 HS2 --> Sewaren	Platform interlinks: Option 3.3: HS2-->> AS3 Option 3.6: OW2-->>AS1 Option 3.7: AS1 -->> AS2		
	Rating (MW)	816	<b>1,148</b>	<b>1,200</b>	<b>1,142</b>	<b>1,400</b>	700	<b>7,647.6</b>	<b>Scenario B1</b>
		432	<b>1,510</b>				700		
						700			



Commercial operation date		2024 1 <sup>st</sup> offshore wind solicitation	2027-2029 2 <sup>nd</sup> offshore wind solicitation	2030 3 <sup>rd</sup> offshore wind solicitation	2031 4 <sup>th</sup> offshore wind solicitation	2033 5 <sup>th</sup> offshore wind solicitation	2033+	Total offshore wind power injection (MW)	Corresponding Onshore POI Power Injection Scenario
Pathway P5.b	Expansion	OW1 --> - Oyster Creek - BL England	Option 2.8 OW2 --> Deans Option 2.10 AS1 --> Deans	Option 2.7 AS2 --> Larrabee	AS3 --> Cardiff*	Option 2.4/2.11 HS2 --> Sewaren	Platform interlinks: Option 3.3: HS2--> AS3 Option 3.6: OW2-->>AS1 Option3.7: AS1 -->> AS2		
	Rating (MW)	816	1,148	1,400	942	1,400	700	7,647.6	Scenario B2
		432	1,510				700		
						700			
Pathway P5.c	Expansion	OW1 --> - Oyster Creek - BL England	Option 2.8 OW2 --> Deans Option 2.10 AS1 --> Deans	Option 2.6 AS2 --> Larrabee	AS3 --> Cardiff*	Option 2.4/2.11 HS2 --> Sewaren			
	Rating (MW)	816	1,148	1,200	1,142	1,400		7,647.6	Scenario B1
		432	1,510						

Commercial operation date		2024 1 <sup>st</sup> offshore wind solicitation	2027-2029 2 <sup>nd</sup> offshore wind solicitation	2030 3 <sup>rd</sup> offshore wind solicitation	2031 4 <sup>th</sup> offshore wind solicitation	2033 5 <sup>th</sup> offshore wind solicitation	2033+	Total offshore wind power injection (MW)	Corresponding Onshore POI Power Injection Scenario
Pathway P5.d	Expansion	OW1 --> - Oyster Creek - BL England	Option 2.8 OW2 --> Deans Option 2.10 AS1 --> Deans	Option 2.7 AS2 --> Larrabee	AS3 --> Cardiff *	Option 2.4/2.11 HS2 --> Sewaren			
	Rating (MW)	816	<b>1,148</b>	<b>1,400</b>	<b>942</b>	<b>1,400</b>		<b>7,647.6</b>	<b>Scenario B2</b>
		432	<b>1,510</b>						
<b>Pathway 6</b>									
Pathway P6.a	Expansion	OW1 --> - Oyster Creek - BL England	Option 2.8 OW2 --> Deans Option 2.10 AS1 --> Deans	Option 2.6 AS2 --> Larrabee	GS --> Cardiff*	Option 2.5/2.12 AS3 --> Sewaren	Platform interlinks: Option 3.4: AS2-->> AS3 Option 3.6: OW2-->>AS1 Option 3.7: AS1 -->> AS2 GS--> OW2		
	Rating (MW)	816	<b>1,148</b>	<b>1,200</b>	<b>1,142</b>	<b>1,400</b>	700	<b>7,647.6</b>	<b>Scenario B1</b>
		432	<b>1,510</b>				700		
							700		
						700			

Commercial operation date		2024 1 <sup>st</sup> offshore wind solicitation	2027-2029 2 <sup>nd</sup> offshore wind solicitation	2030 3 <sup>rd</sup> offshore wind solicitation	2031 4 <sup>th</sup> offshore wind solicitation	2033 5 <sup>th</sup> offshore wind solicitation	2033+	Total offshore wind power injection (MW)	Corresponding Onshore POI Power Injection Scenario
Pathway P6.b	Expansion	OW1 --> - Oyster Creek - BL England	Option 2.8 OW2 --> Deans Option 2.10 AS1 --> Deans	Option 2.7 AS2 --> Larrabee	GS --> Cardiff*	Option 2.5/2.12 AS3 --> Sewaren	Platform interlinks: Option 3.4: AS2-->> AS3 Option 3.6: OW2-->>AS1 Option 3.7: AS1 -->> AS2 GS--> OW2		
	Modeled MW	816	<b>1,148</b>	<b>1,400</b>	<b>942</b>	<b>1,400</b>	<b>700</b>	<b>7,647.6</b>	<b>Scenario B2</b>
		432	<b>1,510</b>				<b>700</b>		
							<b>700</b>		
Pathway P6.c	Expansion	OW1 --> - Oyster Creek - BL England	Option 2.8 OW2 --> Deans Option 2.10 AS1 --> Deans	Option 2.6 AS2 --> Larrabee	GS --> Cardiff*	Option 2.5/2.12 AS3 --> Sewaren			
	Rating (MW)	816	<b>1,148</b>	<b>1,200</b>	<b>1,142</b>	<b>1,400</b>		<b>7,647.6</b>	<b>Scenario B1</b>
		432	<b>1,510</b>						

Commercial operation date		2024 1 <sup>st</sup> offshore wind solicitation	2027-2029 2 <sup>nd</sup> offshore wind solicitation	2030 3 <sup>rd</sup> offshore wind solicitation	2031 4 <sup>th</sup> offshore wind solicitation	2033 5 <sup>th</sup> offshore wind solicitation	2033+	Total offshore wind power injection (MW)	Corresponding Onshore POI Power Injection Scenario
Pathway P6.d	Expansion	OW1 --> - Oyster Creek - BL England	Option 2.8 OW2 --> Deans Option 2.10 AS1 --> Deans	Option 2.7 AS2 --> Larrabee	GS --> Cardiff*	Option 2.5/2.12 AS3 --> Sewaren			
	Rating (MW)	816	<b>1,148</b>	<b>1,400</b>	<b>942</b>	<b>1,400</b>		<b>7,647.6</b>	<b>Scenario B2</b>
		432	<b>1,510</b>						
<b>Pathway 7</b>									
Pathway P7.a	Expansion	OW1 --> - Oyster Creek - BL England	Option 2.8 OW2 --> Deans Option 2.10 AS1 --> Deans	Option 2.6 AS2 --> Larrabee	HS1 --> Cardiff*	Option 2.5/2.12 AS3 --> Sewaren	Platform interlinks: Option 3.4: AS2-->> AS3 Option 3.6: OW2-->>AS1 Option 3.7: AS1 -->> AS2 HS1-->>AS3		
	Rating (MW)	816	<b>1,148</b>	<b>1,200</b>	<b>1,142</b>	<b>1,400</b>	700	<b>7,647.6</b>	<b>Scenario B1</b>
		432	<b>1,510</b>				700		
							700		
						700			

Commercial operation date		2024 1 <sup>st</sup> offshore wind solicitation	2027-2029 2 <sup>nd</sup> offshore wind solicitation	2030 3 <sup>rd</sup> offshore wind solicitation	2031 4 <sup>th</sup> offshore wind solicitation	2033 5 <sup>th</sup> offshore wind solicitation	2033+	Total offshore wind power injection (MW)	Corresponding Onshore POI Power Injection Scenario
Pathway P7.b	Expansion	OW1 --> - Oyster Creek - BL England	Option 2.8 OW2 --> Deans Option 2.10 AS1 --> Deans	Option 2.7 AS2 --> Larrabee	HS1 --> Cardiff	Option 2.5/2.12 AS3 --> Sewaren	Platform interlinks: Option 3.4: AS2-->> AS3 Option 3.6: OW2-->>AS1 Option 3.7: AS1 -->> AS2 HS1-->>AS3		
	Rating (MW)	816	<b>1,148</b>	<b>1,400</b>	<b>942</b>	<b>1,400</b>	<b>700</b>	<b>7,647.6</b>	<b>Scenario B2</b>
		432	<b>1,510</b>				<b>700</b>		
							<b>700</b>		
Pathway P7.c	Expansion	OW1 --> - Oyster Creek - BL England	Option 2.8 OW2 --> Deans Option 2.10 AS1 --> Deans	Option 2.6 AS2 --> Larrabee	HS1 --> Cardiff*	Option 2.5/2.12 AS3 --> Sewaren			
	Rating (MW)	816	<b>1,148</b>	<b>1,200</b>	<b>1,142</b>	<b>1,400</b>		<b>7,647.6</b>	<b>Scenario B1</b>
		432	<b>1,510</b>						

Commercial operation date		2024 1 <sup>st</sup> offshore wind solicitation	2027-2029 2 <sup>nd</sup> offshore wind solicitation	2030 3 <sup>rd</sup> offshore wind solicitation	2031 4 <sup>th</sup> offshore wind solicitation	2033 5 <sup>th</sup> offshore wind solicitation	2033+	Total offshore wind power injection (MW)	Corresponding Onshore POI Power Injection Scenario
Pathway P7.d	Expansion	OW1 --> - Oyster Creek - BL England	Option 2.8 OW2 --> Deans Option 2.10 AS1 --> Deans	Option 2.7 AS2 --> Larrabee	HS1 --> Cardiff*	Option 2.5/2.12 AS3 --> Sewaren			
		816	1,148	1,400	942	1,400		7,647.6	Scenario B2
		432	1,510						
* The link to Cardiff is considered to be built by others and not included in the Anbaric Boardwalk Power Portfolio									

## 5. Conclusion

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Anbaric proposes updates to the Boardwalk Power Portfolio to accommodate changes in the BOEM Lease Areas since the SAA submission. The updates only affect the locations of offshore substation platforms and associated parameters such as water depth, submarine cable length, and possibility for platform interlinking. All onshore design aspects, and electrical system concepts remain unchanged, providing evidence of the flexibility offered by the Anbaric proposed solutions. The proposed updates generally lead to a reduction CAPEX and will thus lead to a further increase in competitiveness of the Boardwalk Power Portfolio