

# MAOD Proposal 3

## General Information

Proposing entity name	MAOD
Does the entity who is submitting this proposal intend to be the Designated Entity for this proposed project?	Yes
Company proposal ID	COMPANY CONFIDENTIAL INFORMATION
PJM Proposal ID	321
Project title	Proposal 3
Project description	Mid-Atlantic Offshore Development (MAOD)'s Proposal is a cost effective and highly reliable solution to deliver offshore energy from offshore wind turbines in various BOEM lease areas to New Jersey on the PJM bulk electrical grid.
Email	
Project in-service date	12/2032
Tie-line impact	No
Interregional project	No
Is the proposer offering a binding cap on capital costs?	Yes
Additional benefits	COMPANY CONFIDENTIAL INFORMATION

## Project Components

1. HVDC Circuit 1
2. HVDC Circuit 2
3. HVDC Circuit 3
4. HVDC Circuit 4

### Greenfield Transmission Line Component

Component title	HVDC Circuit 1	
Project description	COMPANY CONFIDENTIAL INFORMATION	
Point A	MAOD Larrabee Substation	
Point B	MAOD Zone B1	
Point C		
	<b>Normal ratings</b>	<b>Emergency ratings</b>
Summer (MVA)	1200.000000	1200.000000
Winter (MVA)	1200.000000	1200.000000
Conductor size and type	XLPE - 1600 mm2 CU for offshore submarine section / XLPE - 3000 mm2 CU for land section	
Nominal voltage	DC	
Nominal voltage	320 kV	
Line construction type	Underground, Submarine	

General route description	The offshore route area evaluated includes a transmission corridor that include cables routes from existing and future federal renewable energy lease areas to a landfall location in Monmouth County, New Jersey.
Terrain description	The majority of the proposed circuit is submarine, occurring in federal and state waters off the coast of New Jersey, for which description of terrain is not applicable. The onshore segment terrain primarily consists of previously disturbed and developed transportation and transmission ROW. The proposed onshore transmission routes and facilities transverse limited wetlands, waterbodies, forested land and areas subject to New Jersey Green Acres restrictions. More detailed descriptions of terrain for offshore and onshore proposed routes is described in the Environmental Plan and Permitting Plan narratives, BPU Supplemental Appendix 3 and 5 respectively.
Right-of-way width by segment	Proposal offshore segment is a ROW to be secured with the appropriate ROW, rights-of-use and easement grants for submarine transmission. The onshore segment cables are to be buried in trenches up to 8 ft wide. All MAOD transmission cables in each proposed solution are routed to be within the same offshore, submarine cable corridor and share a common landfall to transition to an onshore, underground cable system occupying the same cable corridor that is located in previously disturbed and developed ROW, in order to avoid, or otherwise minimize, impacts to landowners and sensitive ecological resources.
Electrical transmission infrastructure crossings	Larrabee to Atlantic 230 kV line
Civil infrastructure/major waterway facility crossing plan	Onshore the circuit cable will be installed primarily using open trenching techniques. Where the cable crosses sensitive resources like public roads and wetlands, special installation methods may be used such as HDD pipe jacking, or jack and bore. The onshore cable corridor has been located in existing developed ROW. The onshore the route will cross over a number of municipal, county and state roadways, railroad and transmission line corridors and wetlands/streams. Offshore the MAOD circuit route was optimized to avoid key fishing areas, sand borrowsites, cultural resources, shipwrecks and minimize undersea cable crossings. MAOD has a detailed plan for the permitting of the onshore and offshore segments (see Permitting Plan attached in response to this section of the PJM Tool and as Appendix 5 to the BPU Supplemental response).

Environmental impacts	MAOD will seek to avoid or otherwise minimize the potential environmental impacts of the proposed HVDC circuits. Detailed analyses and assessments are described in the Environmental, Fisheries Protection and Permitting Plans, attached to the BPU Supplemental response as Appendix 3-5. Each proposal was designed with appropriate mitigations and intentional siting efforts to minimize and/or avoid environmental impacts to onshore and offshore resources and to minimize impacts to landowners and ocean users.
Tower characteristics	No overhead lines with towers are proposed as part of proposal.
Construction responsibility	Proposer
Benefits/Comments	
<b>Component Cost Details - In Current Year \$</b>	
Engineering & design	COMPANY CONFIDENTIAL INFORMATION
Permitting / routing / siting	COMPANY CONFIDENTIAL INFORMATION
ROW / land acquisition	COMPANY CONFIDENTIAL INFORMATION
Materials & equipment	COMPANY CONFIDENTIAL INFORMATION
Construction & commissioning	COMPANY CONFIDENTIAL INFORMATION
Construction management	COMPANY CONFIDENTIAL INFORMATION
Overheads & miscellaneous costs	COMPANY CONFIDENTIAL INFORMATION
Contingency	COMPANY CONFIDENTIAL INFORMATION
Total component cost	\$1,683,919,000.00
Component cost (in-service year)	\$1,683,919,000.00
<b>Greenfield Transmission Line Component</b>	
Component title	HVDC Circuit 2
Project description	COMPANY CONFIDENTIAL INFORMATION

Point A	MAOD Larrabee Substation	
Point B	MAOD Zone A	
Point C		
	<b>Normal ratings</b>	<b>Emergency ratings</b>
Summer (MVA)	1200.000000	1200.000000
Winter (MVA)	1200.000000	1200.000000
Conductor size and type	XLPE - 1600 mm2 CU for offshore submarine section / XLPE - 3000 mm2 CU for land section	
Nominal voltage	DC	
Nominal voltage	320 kV	
Line construction type	Underground, Submarine	
General route description	The offshore route area evaluated includes a transmission corridor that include cables routes from existing and future federal renewable energy lease areas to a landfall location in Monmouth County, New Jersey.	
Terrain description	The majority of the proposed circuit is submarine, occurring in federal and state waters off the coast of New Jersey, for which description of terrain is not applicable. The onshore segment terrain primarily consists of previously disturbed and developed transportation and transmission ROW. The proposed onshore transmission routes and facilities transverse limited wetlands, waterbodies, forested land and areas subject to New Jersey Green Acres restrictions. More detailed descriptions of terrain for offshore and onshore proposed routes is described in the Environmental Plan and Permitting Plan narratives, BPU Supplemental Appendix 3 and 5 respectively.	

Right-of-way width by segment	Proposal offshore segment is a ROW to be secured with the appropriate ROW, rights-of-use and easement grants for submarine transmission. The onshore segment cables are to be buried in trenches up to 8 ft wide. All MAOD transmission cables in each proposed solution are routed to be within the same offshore, submarine cable corridor and share a common landfall to transition to an onshore, underground cable system occupying the same cable corridor that is located in previously disturbed and developed ROW, in order to avoid, or otherwise minimize, impacts to landowners and sensitive ecological resources.
Electrical transmission infrastructure crossings	Larrabee to Atlantic 230 kV line
Civil infrastructure/major waterway facility crossing plan	Onshore the circuit cable will be installed primarily using open trenching techniques. Where the cable crosses sensitive resources like public roads and wetlands, special installation methods may be used such as HDD pipe jacking, or jack and bore. The onshore cable corridor has been located in existing developed ROW. The onshore the route will cross over a number of municipal, county and state roadways, railroad and transmission line corridors and wetlands/streams. Offshore the MAOD circuit route was optimized to avoid key fishing areas, sand borrowsites, cultural resources, shipwrecks and minimize undersea cable crossings. MAOD has a detailed plan for the permitting of the onshore and offshore segments (see Permitting Plan attached in response to this section of the PJM Tool and as Appendix 5 to the BPU Supplemental response).
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Tower characteristics	No overhead lines with towers are proposed as part of proposal.
Construction responsibility	Proposer
Benefits/Comments	
<b>Component Cost Details - In Current Year \$</b>	
Engineering & design	COMPANY CONFIDENTIAL INFORMATION
Permitting / routing / siting	COMPANY CONFIDENTIAL INFORMATION
ROW / land acquisition	COMPANY CONFIDENTIAL INFORMATION

Materials & equipment	COMPANY CONFIDENTIAL INFORMATION
Construction & commissioning	COMPANY CONFIDENTIAL INFORMATION
Construction management	COMPANY CONFIDENTIAL INFORMATION
Overheads & miscellaneous costs	COMPANY CONFIDENTIAL INFORMATION
Contingency	COMPANY CONFIDENTIAL INFORMATION
Total component cost	\$1,326,710,000.00
Component cost (in-service year)	\$1,326,710,000.00

### **Greenfield Transmission Line Component**

Component title	HVDC Circuit 3
Project description	COMPANY CONFIDENTIAL INFORMATION
Point A	MAOD Larrabee Substation
Point B	MAOD Zone C1
Point C	

	<b>Normal ratings</b>	<b>Emergency ratings</b>
Summer (MVA)	1200.000000	1200.000000
Winter (MVA)	1200.000000	1200.000000
Conductor size and type	XLPE - 1600 mm2 CU for offshore submarine section / XLPE - 3000 mm2 CU for land section	
Nominal voltage	DC	
Nominal voltage	320 kV	

Line construction type	Underground, Submarine
General route description	The offshore route area evaluated includes a transmission corridor that include cables routes from existing and future federal renewable energy lease areas to a landfall location in Monmouth County, New Jersey.
Terrain description	The majority of the proposed circuit is submarine, occurring in federal and state waters off the coast of New Jersey, for which description of terrain is not applicable. The onshore segment terrain primarily consists of previously disturbed and developed transportation and transmission ROW. The proposed onshore transmission routes and facilities transverse limited wetlands, waterbodies, forested land and areas subject to New Jersey Green Acres restrictions. More detailed descriptions of terrain for offshore and onshore proposed routes is described in the Environmental Plan and Permitting Plan narratives, BPU Supplemental Appendix 3 and 5 respectively.
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Electrical transmission infrastructure crossings	Larrabee to Atlantic 230 kV line
Civil infrastructure/major waterway facility crossing plan	Onshore the circuit cable will be installed primarily using open trenching techniques. Where the cable crosses sensitive resources like public roads and wetlands, special installation methods may be used such as HDD pipe jacking, or jack and bore. The onshore cable corridor has been located in existing developed ROW. The onshore the route will cross over a number of municipal, county and state roadways, railroad and transmission line corridors and wetlands/streams. Offshore the MAOD circuit route was optimized to avoid key fishing areas, sand borrowsites, cultural resources, shipwrecks and minimize undersea cable crossings. MAOD has a detailed plan for the permitting of the onshore and offshore segments (see Permitting Plan attached in response to this section of the PJM Tool and as Appendix 5 to the BPU Supplemental response).



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Construction responsibility	Proposer
Benefits/Comments	
<b>Component Cost Details - In Current Year \$</b>	
Engineering & design	COMPANY CONFIDENTIAL INFORMATION
Permitting / routing / siting	COMPANY CONFIDENTIAL INFORMATION
ROW / land acquisition	COMPANY CONFIDENTIAL INFORMATION
Materials & equipment	COMPANY CONFIDENTIAL INFORMATION
Construction & commissioning	COMPANY CONFIDENTIAL INFORMATION
Construction management	COMPANY CONFIDENTIAL INFORMATION
Overheads & miscellaneous costs	COMPANY CONFIDENTIAL INFORMATION
Contingency	COMPANY CONFIDENTIAL INFORMATION
Total component cost	\$1,322,032,000.00
Component cost (in-service year)	\$1,322,032,000.00
<b>Greenfield Transmission Line Component</b>	
Component title	HVDC Circuit 4
Project description	COMPANY CONFIDENTIAL INFORMATION

Point A MAOD Larrabee Substation  
 Point B MAOD Zone C2  
 Point C

	<b>Normal ratings</b>	<b>Emergency ratings</b>
Summer (MVA)	1200.000000	1200.000000
Winter (MVA)	1200.000000	1200.000000
Conductor size and type	XLPE - 1600 mm2 CU for offshore submarine section / XLPE - 3000 mm2 CU for land section	
Nominal voltage	DC	
Nominal voltage	320 kV	
Line construction type	Underground, Submarine	
General route description	The offshore route area evaluated includes a transmission corridor that include cables routes from existing and future federal renewable energy lease areas to a landfall location in Monmouth County, New Jersey.	
Terrain description	The majority of the proposed circuit is submarine, occurring in federal and state waters off the coast of New Jersey, for which description of terrain is not applicable. The onshore segment terrain primarily consists of previously disturbed and developed transportation and transmission ROW. The proposed onshore transmission routes and facilities transverse limited wetlands, waterbodies, forested land and areas subject to New Jersey Green Acres restrictions. More detailed descriptions of terrain for offshore and onshore proposed routes is described in the Environmental Plan and Permitting Plan narratives, BPU Supplemental Appendix 3 and 5 respectively.	

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Electrical transmission infrastructure crossings	Larrabee to Atlantic 230 kV line
Civil infrastructure/major waterway facility crossing plan	Onshore the circuit cable will be installed primarily using open trenching techniques. Where the cable crosses sensitive resources like public roads and wetlands, special installation methods may be used such as HDD pipe jacking, or jack and bore. The onshore cable corridor has been located in existing developed ROW. The onshore the route will cross over a number of municipal, county and state roadways, railroad and transmission line corridors and wetlands/streams. Offshore the MAOD circuit route was optimized to avoid key fishing areas, sand borrowsites, cultural resources, shipwrecks and minimize undersea cable crossings. MAOD has a detailed plan for the permitting of the onshore and offshore segments (see Permitting Plan attached in response to this section of the PJM Tool and as Appendix 5 to the BPU Supplemental response).
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Construction responsibility	Proposer
Benefits/Comments	
<b>Component Cost Details - In Current Year \$</b>	
Engineering & design	COMPANY CONFIDENTIAL INFORMATION
Permitting / routing / siting	COMPANY CONFIDENTIAL INFORMATION
ROW / land acquisition	COMPANY CONFIDENTIAL INFORMATION

Materials & equipment	COMPANY CONFIDENTIAL INFORMATION
Construction & commissioning	COMPANY CONFIDENTIAL INFORMATION
Construction management	COMPANY CONFIDENTIAL INFORMATION
Overheads & miscellaneous costs	COMPANY CONFIDENTIAL INFORMATION
Contingency	COMPANY CONFIDENTIAL INFORMATION
Total component cost	\$1,393,769,000.00
Component cost (in-service year)	\$1,393,769,000.00

### **Congestion Drivers**

None

### **Existing Flowgates**

None

### **New Flowgates**

None

### **Financial Information**

Capital spend start date	10/2022
Construction start date	04/2025
Project Duration (In Months)	122

### **Cost Containment Commitment**

Cost cap (in current year)	COMPANY CONFIDENTIAL INFORMATION
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Cost cap (in-service year)

COMPANY CONFIDENTIAL INFORMATION

**Components covered by cost containment**

- 1. HVDC Circuit 1 - Proposer
- 2. HVDC Circuit 2 - Proposer
- 3. HVDC Circuit 3 - Proposer
- 4. HVDC Circuit 4 - Proposer

**Cost elements covered by cost containment**

Engineering & design	Yes
Permitting / routing / siting	Yes
ROW / land acquisition	Yes
Materials & equipment	Yes
Construction & commissioning	Yes
Construction management	Yes
Overheads & miscellaneous costs	Yes
Taxes	No
AFUDC	No
Escalation	No
Additional Information	COMPANY CONFIDENTIAL INFORMATION.
Is the proposer offering a binding cap on ROE?	No
Is the proposer offering a Debt to Equity Ratio cap?	COMPANY CONFIDENTIAL INFORMATION

## Additional Comments

None