

Oceanview 2,400 MW DC Injection

General Information

Proposing entity name	NEETMH
Does the entity who is submitting this proposal intend to be the Designated Entity for this proposed project?	Yes
Company proposal ID	2-O24
PJM Proposal ID	298
Project title	Oceanview 2,400 MW DC Injection
Project description	Two 1,200 MW HVDC Symmetrical Monopole systems connecting offshore platforms in the Hudson South lease area to a new Neptune 230 kV switchyard near the existing Oceanview 230 kV substation. Loop in the existing Oceanview-Atlantic 230 kV double circuit tower into Neptune 230 kV. Reterminate the Oceanview-Larrabee 230 kV line from Oceanview to the new Neptune 230 kV switchyard.
Email	Johnbinh.Vu@nexteraenergy.com
Project in-service date	06/2028
Tie-line impact	No
Interregional project	No
Is the proposer offering a binding cap on capital costs?	Yes
Additional benefits	See Attachment 1, Section 3.4

Project Components

1. Offshore Platform A –Asbury Park Landing HVDC
2. Offshore Platform B –Asbury Park Landing HVDC
3. Asbury Park Landing – Neptune Converter Station HVDC

4. Offshore Platform A
5. Offshore Platform B
6. Neptune Converter Station
7. Loop in existing Atlantic - Oceanview 230 kV OH line Circuit X at NEETMA...
8. Loop in existing Atlantic - Oceanview 230 kV OH line Circuit Y at NEETMA...
9. Loop in existing Atlantic - Oceanview 230 kV OH line Circuit X at NEETMA...
10. Loop in existing Atlantic - Oceanview 230 kV OH line Circuit Y at NEETMA...
11. Reterminate and Reconductor existing Larrabee - Oceanview 230 kV OH circuit

Greenfield Transmission Line Component

Component title	Offshore Platform A –Asbury Park Landing HVDC	
Project description	Submarine HVDC Symmetrical monopole system from Offshore Platform A to Asbury Park Landing. NEETMA will deliver 1,200 MW at the onshore point of injection. Actual losses will be calculated based upon the exact location of the offshore platform and incorporated into the final cable design	
Point A	Offshore Platform A	
Point B	Asbury Park Landing	
Point C		
	Normal ratings	Emergency ratings
Summer (MVA)	1200.000000	1200.000000
Winter (MVA)	1200.000000	1200.000000
Conductor size and type	2000mm ² copper	
Nominal voltage	DC	
Nominal voltage	400	
Line construction type	Submarine	
General route description	See Attachments 4, 19, and 22	

Terrain description	See Attachments 19 and 22
Right-of-way width by segment	See Attachments 4 and 22
Electrical transmission infrastructure crossings	See Attachment 7
Civil infrastructure/major waterway facility crossing plan	See Attachment 7
Environmental impacts	See Attachment 19
Tower characteristics	See Attachment 6
Construction responsibility	Proposer
Benefits/Comments	See Attachment 1, Section 3.4
Component Cost Details - In Current Year \$	
Engineering & design	Confidential competitive information
Permitting / routing / siting	Confidential competitive information
ROW / land acquisition	Confidential competitive information
Materials & equipment	Confidential competitive information
Construction & commissioning	Confidential competitive information
Construction management	Confidential competitive information
Overheads & miscellaneous costs	Confidential competitive information
Contingency	Confidential competitive information
Total component cost	\$278,200,172.00
Component cost (in-service year)	\$293,312,818.00
Greenfield Transmission Line Component	
Component title	Offshore Platform B –Asbury Park Landing HVDC

Project description	Submarine HVDC Symmetrical monopole system from Offshore Platform B to Asbury Park Landing. NEETMA will deliver 1,200 MW at the onshore point of injection. Actual losses will be calculated based upon the exact location of the offshore platform and incorporated into the final cable design	
Point A	Offshore Platform B	
Point B	Asbury Park Landing	
Point C		
	Normal ratings	Emergency ratings
Summer (MVA)	1200.000000	1200.000000
Winter (MVA)	1200.000000	1200.000000
Conductor size and type	2000mm2 copper	
Nominal voltage	DC	
Nominal voltage	400	
Line construction type	Submarine	
General route description	Submarine route in Atlantic Ocean. See Attachments 4, 19, and 22	
Terrain description	Submarine route in Atlantic Ocean. See Attachments 19 and 22	
Right-of-way width by segment	A kmz of the route is provided as Attachment 4. See Attachment 22 for more details.	
Electrical transmission infrastructure crossings	See Attachment 7 for a list of all crossings and proposed crossing plan.	
Civil infrastructure/major waterway facility crossing plan	See Attachment 7 for a list of all crossings and proposed crossing plan	
Environmental impacts	See Attachment 19	
Tower characteristics	A submarine cable is being proposed. See Attachment 6 for details on proposed submarine installation	
Construction responsibility	Proposer	
Benefits/Comments	See Attachment 1, Section 3.4	

Component Cost Details - In Current Year \$

Engineering & design	Confidential competitive information
Permitting / routing / siting	Confidential competitive information
ROW / land acquisition	Confidential competitive information
Materials & equipment	Confidential competitive information
Construction & commissioning	Confidential competitive information
Construction management	Confidential competitive information
Overheads & miscellaneous costs	Confidential competitive information
Contingency	Confidential competitive information
Total component cost	\$289,063,430.00
Component cost (in-service year)	\$303,013,430.00

Greenfield Transmission Line Component

Component title	Asbury Park Landing – Neptune Converter Station HVDC	
Project description	Two terrestrial HVDC Symmetrical monopole systems in a common duct bank from Asbury Park Landing to Neptune Converter Station. NEETMA will deliver 2,400 MW at the onshore point of injection. Actual losses will be calculated based upon the exact location of the offshore platform and incorporated into the final cable design	
Point A	Asbury Park Landing	
Point B	Neptune Converter Station	
Point C		

	Normal ratings	Emergency ratings
Summer (MVA)	1200.000000	1200.000000
Winter (MVA)	1200.000000	1200.000000

Conductor size and type	6000kcmil copper
Nominal voltage	DC
Nominal voltage	320
Line construction type	Underground
General route description	See Attachments 4, 19, and 22
Terrain description	See Attachments 19 and 22
Right-of-way width by segment	See Attachments 4 and 22
Electrical transmission infrastructure crossings	See Attachment 7
Civil infrastructure/major waterway facility crossing plan	See Attachment 7
Environmental impacts	See Attachment 19
Tower characteristics	See Attachment 6
Construction responsibility	Proposer
Benefits/Comments	See Attachment 1, Section 3.4

Component Cost Details - In Current Year \$

Engineering & design	Confidential competitive information
Permitting / routing / siting	Confidential competitive information
ROW / land acquisition	Confidential competitive information
Materials & equipment	Confidential competitive information
Construction & commissioning	Confidential competitive information
Construction management	Confidential competitive information
Overheads & miscellaneous costs	Confidential competitive information
Contingency	Confidential competitive information

Total component cost \$153,923,738.00
 Component cost (in-service year) \$174,893,738.00

Greenfield Substation Component

Component title Offshore Platform A
 Project description Offshore Platform A to collect offshore wind and deliver 1,200 MW at the point of injection at the Neptune Converter Station
 Substation name Offshore Platform A
 Substation description Offshore platform with an HVDC VSC technology converter station that will allow offshore wind generation to interconnect at 66 kV AC
 Nominal voltage DC
 Nominal voltage 400

Transformer Information

None
 Major equipment description Offshore platform with an HVDC VSC technology converter station that will allow offshore wind generation to interconnect at 66 kV AC

	Normal ratings	Emergency ratings
Summer (MVA)	0.000000	0.000000
Winter (MVA)	0.000000	0.000000
Environmental assessment	See Attachment 19	
Outreach plan	See Attachment 12	
Land acquisition plan	See Attachment 22	
Construction responsibility	Proposer	
Benefits/Comments	See Attachment 1, Section 3.4	

Component Cost Details - In Current Year \$

Engineering & design	Confidential competitive information
Permitting / routing / siting	Confidential competitive information
ROW / land acquisition	Confidential competitive information
Materials & equipment	Confidential competitive information
Construction & commissioning	Confidential competitive information
Construction management	Confidential competitive information
Overheads & miscellaneous costs	Confidential competitive information
Contingency	Confidential competitive information
Total component cost	\$662,036,186.00
Component cost (in-service year)	\$760,286,605.00

Greenfield Substation Component

Component title	Offshore Platform B
Project description	Offshore Platform B to collect offshore wind and deliver 1,200 MW at the point of injection at the Neptune Converter Station
Substation name	Offshore Platform B
Substation description	Offshore platform with an HVDC VSC technology converter station that will allow offshore wind generation to interconnect at 66 kV AC
Nominal voltage	DC
Nominal voltage	400

Transformer Information

None

Major equipment description	Offshore platform with an HVDC VSC technology converter station that will allow offshore wind generation to interconnect at 66 kV AC
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	Normal ratings	Emergency ratings
Summer (MVA)	0.000000	0.000000
Winter (MVA)	0.000000	0.000000
Environmental assessment	See Attachment 19	
Outreach plan	See Attachment 12	
Land acquisition plan	See Attachment 22	
Construction responsibility	Proposer	
Benefits/Comments	See Attachment 1, Section 3.4	

Component Cost Details - In Current Year \$

Engineering & design	Confidential competitive information
Permitting / routing / siting	Confidential competitive information
ROW / land acquisition	Confidential competitive information
Materials & equipment	Confidential competitive information
Construction & commissioning	Confidential competitive information
Construction management	Confidential competitive information
Overheads & miscellaneous costs	Confidential competitive information
Contingency	Confidential competitive information
Total component cost	\$662,031,326.00
Component cost (in-service year)	\$760,281,745.00

Greenfield Substation Component

Component title	Neptune Converter Station
Project description	Onshore Converter station site with two 1,200 MW HVDC converters to connect to the existing 230 kV system to deliver 2,400 MW of offshore wind from Offshore Platforms A and B
Substation name	Neptune Converter Station
Substation description	Two HVDC VSC 1200 MW converters, tying into a new 230 kV AC switchyard, with the existing Atlantic-Oceanview lines looped in and re-termination of the existing Larrabee-Oceanview into Neptune
Nominal voltage	AC
Nominal voltage	230

Transformer Information

None

Major equipment description	Two HVDC VSC 1,200 MW converters, tying into a new 230 kV AC switchyard, with the existing Atlantic-Oceanview lines looped in and re-termination of the existing Larrabee-Oceanview into Neptune
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	Normal ratings	Emergency ratings
Summer (MVA)	0.000000	0.000000
Winter (MVA)	0.000000	0.000000
Environmental assessment	See Attachment 19	
Outreach plan	See Attachment 12	
Land acquisition plan	See Attachment 22	
Construction responsibility	Proposer	
Benefits/Comments	See Attachment 1, Section 3.4	

Component Cost Details - In Current Year \$

Engineering & design	Confidential competitive information
Permitting / routing / siting	Confidential competitive information
ROW / land acquisition	Confidential competitive information
Materials & equipment	Confidential competitive information
Construction & commissioning	Confidential competitive information
Construction management	Confidential competitive information
Overheads & miscellaneous costs	Confidential competitive information
Contingency	Confidential competitive information
Total component cost	\$578,718,977.00
Component cost (in-service year)	\$653,275,181.90

Transmission Line Upgrade Component

Component title	Loop in existing Atlantic - Oceanview 230 kV OH line Circuit X at NEETMA proposed Neptune 230 kV substation and reconductor the line section from Atlantic-Neptune
Project description	Loop in existing Atlantic - Oceanview 230 kV OH line Circuit X at NEETMA proposed Neptune 230 kV substation and reconductor the line section from Atlantic-Neptune
Impacted transmission line	Atlantic to New NEETMA-Neptune substation 230 kV line
Point A	Atlantic
Point B	Neptune
Point C	
Terrain description	Terrain is cleared land area in sub-urban settings. Cut-ins will occur on ROW/easements owned by incumbent, and substation will be constructed on property NEETMA will obtain site control for

Existing Line Physical Characteristics

Operating voltage	230
Conductor size and type	Same as existing
Hardware plan description	Utilize existing line hardware to extent practicable
Tower line characteristics	New dead end structures will need to be installed in order to loop existing lines into the NEETMA Neptune substation

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	230.000000	230.000000
	Normal ratings	Emergency ratings
Summer (MVA)	1086.000000	1456.000000
Winter (MVA)	1222.000000	1618.000000
Conductor size and type	1033.5 kcmil Curlew ACSR: 2C Bundle	
Shield wire size and type	Utilize existing shield wire to extent practicable	
Rebuild line length	4.76 miles	
Rebuild portion description	Reconductor and construct new ~0.25 mi long 230 kV loop-ins to tie into the NEETMA Neptune AC substation	
Right of way	Use of existing ROW, no expansion anticipated	
Construction responsibility	JCPL	
Benefits/Comments	Resolves reliability issues identified per PJM's Gen. Deliv. Process	
Component Cost Details - In Current Year \$		
Engineering & design	Confidential competitive information	
Permitting / routing / siting	Confidential competitive information	

ROW / land acquisition	Confidential competitive information
Materials & equipment	Confidential competitive information
Construction & commissioning	Confidential competitive information
Construction management	Confidential competitive information
Overheads & miscellaneous costs	Confidential competitive information
Contingency	Confidential competitive information
Total component cost	\$6,190,000.00
Component cost (in-service year)	\$6,700,000.00

Transmission Line Upgrade Component

Component title	Loop in existing Atlantic - Oceanview 230 kV OH line Circuit Y at NEETMA proposed Neptune 230 kV substation and reconductor the line section from Atlantic-Neptune
Project description	Loop in existing Atlantic - Oceanview 230 kV lines at NEETMA proposed Neptune 230 kV substation and reconductor the line section from Atlantic-Neptune
Impacted transmission line	Atlantic to New NEETMA-Neptune sub 230 kV line
Point A	Atlantic
Point B	Neptune
Point C	
Terrain description	Terrain is cleared land area in sub-urban settings. Cut-ins will occur on ROW/easements owned by incumbent, and substation will be constructed on property NEETMA will obtain site control for

Existing Line Physical Characteristics

Operating voltage	230
Conductor size and type	Same as existing
Hardware plan description	Utilize existing line hardware to extent practicable

Tower line characteristics

New dead end structures will need to be installed in order to loop existing lines into the NEETMA Neptune substation

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	230.000000	230.000000
	Normal ratings	Emergency ratings
Summer (MVA)	1086.000000	1456.000000
Winter (MVA)	1222.000000	1618.000000
Conductor size and type	1033.5 kcmil Curlew ACSR: 2C	
Shield wire size and type	Utilize existing shield wire to extent practicable	
Rebuild line length	4.76 miles	
Rebuild portion description	Reconductor and construct new ~0.25 mi long 230 kV loop-ins to tie into the NEETMA Neptune AC substation	
Right of way	Use of existing ROW, no expansion anticipated	
Construction responsibility	JCPL	
Benefits/Comments	Resolves reliability issues identified per PJM's Gen. Deliv. Process	
Component Cost Details - In Current Year \$		
Engineering & design	Confidential competitive information	
Permitting / routing / siting	Confidential competitive information	
ROW / land acquisition	Confidential competitive information	
Materials & equipment	Confidential competitive information	
Construction & commissioning	Confidential competitive information	

Voltage (kV)	230.000000	230.000000
	Normal ratings	Emergency ratings
Summer (MVA)	1337.000000	1642.000000
Winter (MVA)	1403.000000	1720.000000
Conductor size and type	Same as existing	
Shield wire size and type	Utilize existing shield wire to extent practicable	
Rebuild line length	0.3 miles	
Rebuild portion description	Construct new ~0.25 mi long 230 kV loop-ins to tie into the NEETMA Neptune AC substation	
Right of way	Use of existing ROW, no expansion anticipated	
Construction responsibility	JCPL	
Benefits/Comments	Resolves reliability issues identified per PJM's Gen. Deliv. Process	
Component Cost Details - In Current Year \$		
Engineering & design	Confidential competitive information	
Permitting / routing / siting	Confidential competitive information	
ROW / land acquisition	Confidential competitive information	
Materials & equipment	Confidential competitive information	
Construction & commissioning	Confidential competitive information	
Construction management	Confidential competitive information	
Overheads & miscellaneous costs	Confidential competitive information	
Contingency	Confidential competitive information	
Total component cost	\$2,000,000.00	
Component cost (in-service year)	\$2,160,000.00	

Transmission Line Upgrade Component

Component title	Loop in existing Atlantic - Oceanview 230 kV OH line Circuit Y at NEETMA proposed Neptune 230 kV substation and reconductor the line section from Neptune - Oceanview 230 kV OH line Circuit -Y
Project description	Loop in existing Atlantic - Oceanview 230 kV OH line Circuit Y at NEETMA proposed Neptune 230 kV substation and reconductor the line section from Neptune - Oceanview 230 kV OH line Circuit -Y
Impacted transmission line	New NEETMA-Neptune sub to Oceanview 230 kV line
Point A	Neptune
Point B	Oceanview
Point C	
Terrain description	Terrain is cleared land area in sub-urban settings. Cut-ins will occur on ROW/easements owned by incumbent, and substation will be constructed on property NEETMA will obtain site control for

Existing Line Physical Characteristics

Operating voltage	230
Conductor size and type	Same as existing
Hardware plan description	Utilize existing line hardware to extent practicable
Tower line characteristics	New dead end structures will need to be installed in order to loop existing lines into the NEETMA Neptune substation

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	230.000000	230.000000
	Normal ratings	Emergency ratings
Summer (MVA)	1337.000000	1672.000000
Winter (MVA)	1403.000000	1720.000000

Conductor size and type	Same as existing
Shield wire size and type	Utilize existing shield wire to extent practicable
Rebuild line length	0.3 miles
Rebuild portion description	Construct new ~0.25 mi long 230 kV loop-ins to tie into the NEETMA Neptune AC substation
Right of way	Use of existing ROW, no expansion anticipated
Construction responsibility	JCPL
Benefits/Comments	Resolves reliability issues identified per PJM's Gen. Deliv. Process

Component Cost Details - In Current Year \$

Engineering & design	Confidential competitive information
Permitting / routing / siting	Confidential competitive information
ROW / land acquisition	Confidential competitive information
Materials & equipment	Confidential competitive information
Construction & commissioning	Confidential competitive information
Construction management	Confidential competitive information
Overheads & miscellaneous costs	Confidential competitive information
Contingency	Confidential competitive information
Total component cost	\$2,000,000.00
Component cost (in-service year)	\$2,160,000.00

Transmission Line Upgrade Component

Component title	Reterminate and Reconductor existing Larrabee - Oceanview 230 kV OH circuit
Project description	Reconductor existing Larrabee - Oceanview 230 kV line, and reterminate the Oceanview 230 kV end into NEETMA's Neptune 230 kV substation

Impacted transmission line	Larrabee to Oceanview 230 kV line
Point A	Larrabee
Point B	Oceanview
Point C	
Terrain description	Expect to utilize existing easements/utility owned property, no expansion anticipated

Existing Line Physical Characteristics

Operating voltage	230
Conductor size and type	Same as existing
Hardware plan description	Utilize existing line hardware to extent practicable
Tower line characteristics	Utilize existing towers to extent practicable

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	230.000000	230.000000
	Normal ratings	Emergency ratings
Summer (MVA)	887.000000	1195.000000
Winter (MVA)	997.000000	1322.000000
Conductor size and type	2156 kcmil Bluebird ACSR:1C Bundle	
Shield wire size and type	Utilize existing shield wire to extent practicable	
Rebuild line length	16.6 miles	
Rebuild portion description	Proposing to reconductor the entire line (or necessary portion) to achieve the specified rating	
Right of way	Use of existing ROW, no expansion anticipated	

Construction responsibility

JCPL

Benefits/Comments

Resolves reliability issues identified per PJM's Gen. Deliv. Process

Component Cost Details - In Current Year \$

Engineering & design

Confidential competitive information

Permitting / routing / siting

Confidential competitive information

ROW / land acquisition

Confidential competitive information

Materials & equipment

Confidential competitive information

Construction & commissioning

Confidential competitive information

Construction management

Confidential competitive information

Overheads & miscellaneous costs

Confidential competitive information

Contingency

Confidential competitive information

Total component cost

\$21,580,000.00

Component cost (in-service year)

\$23,360,000.00

Congestion Drivers

None

Existing Flowgates

None

New Flowgates

None

Financial Information

Capital spend start date	01/2022
Construction start date	12/2025
Project Duration (In Months)	77

Cost Containment Commitment

Cost cap (in current year)	Confidential competitive information
Cost cap (in-service year)	Confidential competitive information

Components covered by cost containment

1. Offshore Platform A –Asbury Park Landing HVDC - Proposer
2. Offshore Platform B –Asbury Park Landing HVDC - Proposer
3. Asbury Park Landing – Neptune Converter Station HVDC - Proposer
4. Offshore Platform A - Proposer
5. Offshore Platform B - Proposer
6. Neptune Converter Station - 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	Yes
AFUDC	Yes
Escalation	Yes
Additional Information	Confidential competitive information
Is the proposer offering a binding cap on ROE?	Yes
Would this ROE cap apply to the determination of AFUDC?	Yes
Would the proposer seek to increase the proposed ROE if FERC finds that a higher ROE would not be unreasonable?	No
Is the proposer offering a Debt to Equity Ratio cap?	Confidential competitive information
Additional cost containment measures not covered above	Confidential competitive information

Additional Comments

None