

NORTHEAST TRANSMISSION DEVELOPMENT

a Member of the LS Power Group

PROPOSALS



In Response to the:

PJM RTEP – 2015 RTEP Proposal Window #1

August 4, 2015

NORTHEAST TRANSMISSION DEVELOPMENT

TABLE OF CONTENTS

A. Executive Summary	1
B. Company Evaluation Information	7
C. Constructability	8
D. Analytical Assessment	28
E. Cost	29
F. Schedule	31
G. Operations/Maintenance	34

NORTHEAST TRANSMISSION DEVELOPMENT

A. EXECUTIVE SUMMARY

Northeast Transmission Development, LLC (“NTD”), a member of the LS Power Group (“LS Power”) is pleased to present the following projects (individually “Project” or collectively “Projects”) to resolve potential reliability criteria violations identified by PJM. The potential reliability criteria violations were identified in accordance with all applicable planning criteria (PJM, NERC, SERC, RFC, and Local Transmission Owner criteria) for the 2015 RTEP Proposal Window #1.

NTD seeks to be the Designated Entity¹ for these Projects, designated by PJM to develop, construct, own, operate, maintain, and finance the Projects. NTD has demonstrated its capability to develop, finance, construct, own and operate large scale power projects, including high-voltage transmission projects. LS Power has a strong track record of success throughout the United States, including significant generation experience and the successful development, construction, and operation of hundreds of miles of high-voltage transmission.

The Projects are described below. NTD provides cost containment for each of the Projects to cap the costs to place each Project in-service and the level of equity and rate of return it would seek. Each Project should be evaluated independently and can be placed in service in advance of the identified need of June 1, 2020.

1. BETHLEN - RALPHTON - STATLER HILL - (2015_1-8A)

The Project consists of a new approximately 20-mile 138 kV transmission line from the existing Bethlen 138 kV substation to a new 138/115 kV substation (“Ralphton 138 kV”) which interconnects to the Ralphton 115 kV substation and a new approximately 10-mile 115 kV transmission line that will connect the Ralphton 115 kV substation to the existing Statler Hill 115 kV substation. The Project has an estimated construction cost of approximately \$59.4 million, spans between multiple PJM Transmission Owner zones, and will resolve voltage drop, voltage magnitude, thermal and generator deliverability violations in southern Pennsylvania.

2. BETHLEN - STONYCREEK - STATLER HILL - (2015_1-8B)

The Project consists of a new approximately 20-mile 138 kV transmission line from the existing Bethlen 138 kV substation to a new Stonycreek 138/115 kV substation interconnecting with the existing Hooversville-Ralphton 115 kV line and the Hooversville-Somerset 115 kV line and a new approximately 4-mile 115 kV transmission line that will connect the Stonycreek 138/115 kV substation to the existing Statler Hill 115 kV substation. The Project has an estimated construction cost of approximately \$58.1 million, spans between multiple PJM Transmission Owner zones, and will resolve voltage drop, voltage magnitude, thermal and generator deliverability violations in southern Pennsylvania.

¹ Pre-qualification ID 13-06.

NORTHEAST TRANSMISSION DEVELOPMENT

3. BOLT - TAMS MOUNTAIN - (2015_1-8C)

The Project consists of a new approximately 9-mile 138 kV transmission line connecting the existing Bolt 138 kV substation to the existing Tams Mountain 138 kV substation. The Project has an estimated construction cost of approximately \$23.0 million and will resolve voltage drop, voltage magnitude and thermal violations in southern West Virginia.

4. BOWLING GREEN DOUBLE CIRCUIT - (2015_1-8D)

The Project consists of a new approximately 9-mile 138 kV double circuit transmission line from the Lemoyne to West End Fostoria 138 kV Line to a new 138/69 kV substation (Bowling Green 4 138 kV) which interconnects to the Bowling Green 4 69 kV substation. The Project has an estimated construction cost of approximately \$20.6 million, spans between multiple PJM Transmission Owner zones, and will resolve voltage drop violations in northwestern Ohio.

5. BOWLING GREEN - (2015_1-8E)

The Project consists of a new approximately 9-mile 138 kV transmission line from the Lemoyne to West End Fostoria 138 kV Line to a new 138/69 kV substation (Bowling Green 4 138 kV) which interconnects to the Bowling Green 4 69 kV substation. The Project has an estimated construction cost of approximately \$13.2 million, spans between multiple PJM Transmission Owner zones, and will resolve voltage drop violations in northwestern Ohio.

6. CHERRYTREE - FRANKLIN - (2015_1-8F)

The Project consists of a new approximately 24-mile 115 kV transmission line connecting the new CherryTree 115 kV switching station along the existing Union City-Titusville 115 kV transmission line and the Titusville-Grandview 115 kV transmission line to the new Franklin 115 kV switching station along the existing Wayne-Geneva 115 kV transmission line and the Air Products-Morgan Street 115 kV transmission line. The Project has an estimated construction cost of approximately \$45.3 million and will resolve voltage drop and voltage magnitude violations in western Pennsylvania.

7. CHERRYTREE - MORGAN STREET - (2015_1-8G)

The Project consists of a new approximately 28-mile 115 kV transmission line connecting the new CherryTree 115 kV switching station along the existing Union City-Titusville 115 kV transmission line and the Titusville-Grandview 115 kV transmission line to the existing Morgan Street 115 kV substation. The Project has an estimated construction cost of approximately \$45.3 million and will resolve voltage drop and voltage magnitude violations in western Pennsylvania.

8. CHERRYTREE - WAYNE - (2015_1-8H)

NORTHEAST TRANSMISSION DEVELOPMENT

The Project consists of a new approximately 18-mile 115 kV transmission line connecting the new CherryTree 115 kV switching station along the existing Union City-Titusville 115 kV transmission line and the Titusville-Grandview 115 kV transmission line to the existing Wayne 115 kV substation. The Project has an estimated construction cost of approximately \$29.9 million and will resolve voltage drop and voltage magnitude violations in western Pennsylvania.

9. EAST WINDSOR - WYCKOFF/ENGLISHTOWN - (2015_1-8I)

The Project consists of a new approximately 3-mile double circuit 115 kV transmission line connecting the existing Wyckoff to Englishtown 115 kV transmission line to a new 230/115 kV substation ("East Windsor 115 kV") which interconnects to the existing East Windsor 230 kV substation. The Project has an estimated construction cost of approximately \$17.1 million and will resolve voltage drop and voltage magnitude violations in central New Jersey.

10. ENGLISHTOWN - (2015_1-8J)

The Project consists of a new 500/230 kV substation interconnecting the existing Deans to Smithburg 500 kV transmission line to the existing Englishtown 230 kV substation. The Project has an estimated construction cost of approximately \$26.0 million and will resolve voltage drop and voltage magnitude violations in central New Jersey.

11. GRAND POINT - CARLISLE PIKE - OPTION 1 - (2015_1-8K)

The Project consists of a new approximately 13-mile 115 kV transmission line from a new 138/115 kV substation (Grand Point 115 kV), which interconnects to the existing Grand Point 138 kV substation, to the existing Carlisle Pike 115 kV substation. The Project has an estimated construction cost of approximately \$21.5 million, spans between multiple PJM Transmission Owner zones, and will resolve voltage drop violations in southern Pennsylvania.

12. GRAND POINT - CARLISLE PIKE - OPTION 2 - (2015_1-8L)

The Project consists of a new approximately 13-mile 138 kV transmission line from the existing Grand Point 138 kV substation, to a new 138/115 kV substation (Carlisle Pike 115 kV) which interconnects to the existing Carlisle Pike 115 kV substation. The Project has an estimated construction cost of approximately \$22.2 million, spans between multiple PJM Transmission Owner zones, and will resolve voltage drop violations in southern Pennsylvania.

13. GRAND POINT - ROXBURY - OPTION 1 - (2015_1-8M)

The Project consists of a new approximately 14-mile 115 kV transmission line from a new 138/115 kV substation (Grand Point 115 kV), which interconnects to the existing Grand Point 138 kV substation, to the existing Roxbury 115 kV substation. The Project has an estimated construction cost of

NORTHEAST TRANSMISSION DEVELOPMENT

approximately \$21.7 million, spans between multiple PJM Transmission Owner zones, and will resolve voltage drop violations in southern Pennsylvania.

14. GRAND POINT - ROXBURY - OPTION 2 - (2015_1-8N)

The Project consists of a new approximately 14-mile 138 kV transmission line from the existing Grand Point 138 kV substation to the existing Roxbury 138/115 kV substation. The Project has an estimated construction cost of approximately \$22.3 million, spans between multiple PJM Transmission Owner zones, and will resolve voltage drop violations in southern Pennsylvania.

15. GRANDVIEW - FRANKLIN - (2015_1-8O)

The Project consists of a new approximately 27-mile 115 kV transmission line connecting the existing Grandview 115 kV substation to the new Franklin 115 kV switching station along the existing Wayne-Geneva 115 kV transmission line and the Air Products-Morgan Street 115 kV transmission line. The Project has an estimated construction cost of approximately \$45.3 million and will resolve voltage drop and voltage magnitude violations in western Pennsylvania.

16. GRANDVIEW - MORGAN STREET - (2015_1-8P)

The Project consists of a new approximately 31-mile 115 kV transmission line connecting the existing Grandview 115 kV substation to the existing Morgan Street 115 kV substation. The Project has an estimated construction cost of approximately \$45.4 million and will resolve voltage drop and voltage magnitude violations in western Pennsylvania.

17. GRANDVIEW - WAYNE - (2015_1-8Q)

The Project consists of a new approximately 21-mile 115 kV transmission line connecting the existing Grandview 115 kV substation to the existing Wayne 115 kV substation. The Project has an estimated construction cost of approximately \$30.0 million and will resolve voltage drop and voltage magnitude violations in western Pennsylvania.

18. GRASSY CREEK - (2015_1-8R)

The Project consists of a new Grassy Creek 138 kV switching station connecting the existing Summerfield to Switzer 138 kV transmission line, the Steamtown Skid to Natrium 138 kV transmission line and the Tap to Somerton 138 kV transmission line. The Project has an estimated construction cost of approximately \$7.4 million and will resolve thermal, voltage drop and voltage magnitude violations in southeastern Ohio.

19. GREAT BRANCH - (2015_1-8S)

The Project consists of a new Great Branch 230 kV switching station connecting the existing Chesterfield to Ironbridge 230 kV transmission line, the existing Chesterfield to Basin 230 kV transmission line and

NORTHEAST TRANSMISSION DEVELOPMENT

the existing Ironbridge to Spruance 230 kV transmission line. The Project has an estimated construction cost of approximately \$15.6 million and will resolve generator deliverability violations in southern Virginia.

20. GREEN RIDGE - CARLISLE PIKE - (2015_1-8T)

The Project consists of a new approximately 6-mile 115 kV transmission line from the previously proposed 500/138 kV Green Ridge substation to the existing 115 kV Carlisle Pike. The Project has an estimated construction cost of approximately \$16.9 million, spans between multiple PJM Transmission Owner zones, and will resolve voltage drop violations in southern Pennsylvania.

21. MOUNTAIN - CARLISLE PIKE - (2015_1-8U)

The Project consists of a new approximately 20-mile 115 kV transmission line from the existing Mountain 115 kV substation to the existing Carlisle Pike 115 kV substation. The Project has an estimated construction cost of approximately \$32.3 million, spans between multiple PJM Transmission Owner zones, and will resolve voltage drop violations in southern Pennsylvania.

22. NEWTON FALLS - FRANKLIN - (2015_1-8V)

The Project consists of a new approximately 7-mile 138 kV transmission line from the existing Newton Falls 138 kV substation to the existing Franklin 138 kV substation. The Project has an estimated construction cost of approximately \$19.6 million and will resolve thermal violations in northeastern Ohio.

23. REEDY CREEK - (2015_1-8W)

The Project consists of (i) a new Great Branch 230 kV switching station connecting the existing Chesterfield to Ironbridge 230 kV transmission line, the existing Chesterfield to Basin 230 kV transmission line and the existing Ironbridge to Spruance 230 kV transmission line and (ii) a new Reedy Creek 230 kV switching station connecting the existing Ironbridge to Southwest 230 kV transmission line, the existing Ironbridge to Hull Street Road 230 kV transmission line and the existing Hull Street Road to Southwest 230 kV transmission line. The Project has an estimated construction cost of approximately \$29.4 million and will resolve generator deliverability violations in southern Virginia.

24. ROGERS ROAD - CARSON - (2015_1-8X)

The Project consists of a new approximately 29-mile 500 kV transmission line from the planned Rogers Road 500 kV switching station to the existing Carson 500 kV substation. The Project has an estimated construction cost of approximately \$78.7 million and will resolve generator deliverability violations in southern Virginia.

25. ROGERS ROAD - CLUBHOUSE - (2015_1-8Y)

NORTHEAST TRANSMISSION DEVELOPMENT

The Project consists of a new approximately 5-mile 230 kV transmission line from a new 500/230 kV substation (Rogers Road 230 kV), which interconnects to the planned Rogers Road 500 kV switching station to the existing Clubhouse 230 kV substation. The Project has an estimated construction cost of approximately \$27.8 million and will resolve generator deliverability violations in southern Virginia.

26. SAND BRANCH - (2015_1-8Z)

The Project consists of a new Sand Branch 345/138 kV substation interconnecting the existing Kanawha River-Matt Funk 345 kV line, the Bradley-Dameron 138 kV line and the Bradley-Pole Yard 138 kV line. The Project has an estimated construction cost of approximately \$19.2 million and will resolve voltage drop, voltage magnitude and thermal violations in southern West Virginia.

27. STONY HILL - OPTION 1 - (2015_1-8AA)

The Project consists of a new Stony Hill 138 kV switching station connecting the existing Shenango to Masury 138 kV transmission line, the existing Shenango to LTV Steel 138 kV transmission line and the existing Lincoln Park to Elwood 138 kV transmission line. The Project has an estimated construction cost of approximately \$12.0 million and will resolve voltage drop and voltage magnitude violations in eastern Ohio.

28. STONY HILL - OPTION 2 - (2015_1-8AB)

The Project consists of a new Stony Hill 138 kV switching station connecting the existing Shenango to Masury 138 kV transmission line and the existing Lincoln Park to Elwood 138 kV transmission line. The Project has an estimated construction cost of approximately \$6.0 million and will resolve voltage drop and voltage magnitude violations in eastern Ohio.

29. STONY HILL - OPTION 3 - (2015_1-8AC)

The Project consists of a new Stony Hill 138 kV switching station connecting the existing Shenango to LTV Steel 138 kV transmission line and the existing Lincoln Park to Elwood 138 kV transmission line. The Project has an estimated construction cost of approximately \$6.0 million and will resolve voltage drop and voltage magnitude violations in eastern Ohio.

30. WICK - (2015_1-8AD)

The Project consists of a new Wick 138 kV switching station near the Masury to Salt Springs 138 kV line with a new approximately 5-mile double circuit connection to the Central Niles to Garden 138 kV line. The Project has an estimated construction cost of approximately \$19.4 million and will resolve thermal violations in eastern Ohio.

NORTHEAST TRANSMISSION DEVELOPMENT

B. COMPANY EVALUATION INFORMATION

NTD is a member of the LS Power Group,² an experienced developer of large-scale energy projects, including several transmission projects. Since 1990, LS Power has had the technical and engineering capability to develop, own and/or operate over 30,000 MW of power generation facilities and two large high-voltage (345 kV and 500 kV) transmission projects totaling over 700 circuit-miles. LS Power currently has operating assets and development projects within PJM in Delaware, Illinois, Kentucky, New Jersey, Pennsylvania and Virginia. Additional information confirming NTD's qualifications to be selected as the Designated Entity³ was included in the pre-qualification documentation.

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³ Pre-qualification ID 13-06.

NORTHEAST TRANSMISSION DEVELOPMENT

C. CONSTRUCTABILITY

A general Project location map for all Projects can be found in *Appendix A*. A more detailed map depicting each representative location can be found in *Appendix B*.

1. BETHLEN - RALPHTON - STATLER HILL

The Project consists of a new approximately 20-mile 138 kV transmission line from the existing Bethlen 138 kV substation to a new 138/115 kV substation (Ralphton 138 kV) which interconnects to the Ralphton 115 kV substation and a new approximately 10-mile 115 kV transmission line that will connect the Ralphton 115 kV substation to the existing Statler Hill 115 kV substation.

A. BETHLEN 138 kV SUBSTATION INTERCONNECTION

The first component of the Project consists of interconnecting to the existing Bethlen 138 kV substation and associated terminal improvements. This work would be completed by the incumbent transmission owner.

B. BETHLEN - RALPHTON 138 kV TRANSMISSION LINE

The second component of the Project is a new approximately 20-mile 138 kV overhead single circuit transmission line interconnecting the existing Bethlen 138 kV substation to a new Ralphton 138/115 kV substation. The representative route is located in Westmoreland County and Somerset County in Pennsylvania.

C. RALPHTON 138/115 kV SUBSTATION

The third component of the Project is a new 138/115 kV substation interconnecting the existing Hooversville-Ralphton 115 kV line and the Ralphton-Somerset 115 kV line with the new Bethlen-Ralphton 138 kV line and a connection to Ralphton 115 kV substation. The new Ralphton 138/115 kV substation is proposed to be located on privately-owned land in Somerset County, Pennsylvania. NTD evaluated expansion of the existing Ralphton 115 kV substation; however, determined that a new

NORTHEAST TRANSMISSION DEVELOPMENT

substation would be more cost effective due to terrain and limited 115 kV equipment at the existing Ralphton substation.

The Project is electrically equivalent to the extent PJM determines that expansion of the existing Ralphton 115 kV substation would be preferred. In this event, the work would be completed by the incumbent transmission owner.

D. RALPHTON 138/115 kV TRANSMISSION INTERCONNECTION

The fourth component of the Project is constructing 3 new towers to connect the existing transmission lines into the new Ralphton 138/115 kV substation. NTD anticipates completing this work.

E. RALPHTON - STATLER HILL 115 kV TRANSMISSION LINE

The fifth component of the Project is a new approximately 10-mile 115 kV overhead single circuit transmission line interconnecting the Ralphton 115 kV substation to the existing Statler Hill 115 kV substation. The representative route is located in Somerset County in Pennsylvania.

F. STATLER HILL 115 kV SUBSTATION INTERCONNECTION

The sixth component of the Project consists of interconnecting to the existing Statler Hill 115 kV substation and associated terminal improvements. This work would be completed by the incumbent transmission owner.

2. BETHLEN - STONYCREEK - STATLER HILL

The Project consists of a new approximately 20-mile 138 kV transmission line from the existing Bethlen 138 kV substation to a new Stonycreek 138/115 kV substation interconnecting with the existing Hooversville-Ralphton 115 kV line and the Hooversville-Somerset 115 kV line and a new approximately 4-mile 115 kV transmission line that will connect the Stonycreek 138/115 kV substation to the existing Statler Hill 115 kV substation.

A. BETHLEN 138 kV SUBSTATION INTERCONNECTION

The first component of the Project consists of interconnecting to the existing Bethlen 138 kV substation and associated terminal improvements. This work would be completed by the incumbent transmission owner.

B. BETHLEN - STONYCREEK 138 kV TRANSMISSION LINE

The second component of the Project is a new approximately 20-mile 138 kV overhead single circuit transmission line interconnecting the existing Bethlen 138 kV substation to a new Stonycreek 138/115

NORTHEAST TRANSMISSION DEVELOPMENT

kV substation. The representative route is located in Westmoreland County and Somerset County in Pennsylvania.

C. STONYCREEK 138/115 kV SUBSTATION

The third component of the Project is a new 138/115 kV substation interconnecting the existing Hooversville-Ralphton 115 kV line and the Hooversville-Somerset 115 kV line with the new Bethlen-Stonycreek 138 kV line and the Stonycreek-Statler Hill 115 kV line. The new Stonycreek 138/115 kV substation is proposed to be located on located on privately-owned land in Somerset County, Pennsylvania.

D. STONYCREEK 138/115 kV TRANSMISSION INTERCONNECTION

The third component of the Project is constructing 4 new towers to connect the existing transmission lines into the new Stonycreek 138/115 kV substation. NTD anticipates completing this work.

E. STONYCREEK - STATLER HILL 115 kV TRANSMISSION LINE

The fourth component of the Project is a new approximately 4-mile 115 kV overhead single circuit transmission line interconnecting the Stonycreek 138/115 kV substation to the existing Statler Hill 115 kV substation. The representative route is located in Somerset County in Pennsylvania.

F. STATLER HILL 115 kV SUBSTATION INTERCONNECTION

The fifth component of the Project consists of interconnecting to the existing Statler Hill 115 kV substation and associated terminal improvements. This work would be completed by the incumbent transmission owner.

3. BOLT - TAMS MOUNTAIN

The Project consists of a new approximately 9-mile 138 kV transmission line connecting the existing Bolt 138 kV substation to the existing Tams Mountain 138 kV substation.

A. BOLT 138 kV SUBSTATION INTERCONNECTION

The first component of the Project consists of interconnecting to the existing Bolt 138 kV substation and associated terminal improvements. This work would be completed by the incumbent transmission owner.

B. BOLT - TAMS MOUNTAIN 138 kV TRANSMISSION LINE

The second component of the Project is a new approximately 9-mile 138 kV overhead single circuit transmission line interconnecting the existing Bolt 138 kV substation to the existing Tams Mountain 138

NORTHEAST TRANSMISSION DEVELOPMENT

kV substation. The representative route is located in Wyoming County and Raleigh County in West Virginia.

C. TAMS MOUNTAIN 138 kV SUBSTATION INTERCONNECTION

The third component of the Project consists of interconnecting to the existing Tams Mountain 138 kV substation and associated terminal improvements. This work would be completed by the incumbent transmission owner.

4. BOWLING GREEN DOUBLE CIRCUIT

The Project consists of a new approximately 9-mile 138 kV double circuit transmission line from the Lemoyne to West End Fostoria 138 kV Line to a new 138/69 kV substation (Bowling Green 4 138 kV) which interconnects to the Bowling Green 4 69 kV substation.

A. BOWLING GREEN 138 kV DOUBLE CIRCUIT TRANSMISSION LINE

The primary component of the Project is a new approximately 9-mile 138 kV overhead double circuit transmission line interconnecting the existing Lemoyne to West End Fostoria 138 kV line to a new 138/69 kV substation (Bowling Green 4 138 kV). The representative route is located in Wood County, Ohio.

B. BOWLING GREEN 4 138/69 kV SUBSTATION

The second component of the Project is a new 138/69 kV substation with the new 138 kV double circuit line from the existing Lemoyne to West End Fostoria 138 kV line connected to two 138/69 kV transformers and both interconnecting to the existing Bowling Green 4 69 kV substation. The new Bowling Green 4 138/69 kV substation is proposed to be located on privately-owned land in Wood County, Ohio.

C. BOWLING GREEN 69 kV SUBSTATION INTERCONNECTION

The third component of the Project consists of interconnecting to the existing Bowling Green 4 69 kV substation and associated terminal improvements. This work would be completed by the incumbent transmission owner.

5. BOWLING GREEN

The Project consists of a new approximately 9-mile 138 kV single circuit transmission line from the Lemoyne to West End Fostoria 138 kV Line to a new 138/69 kV substation (Bowling Green 4 138 kV) which interconnects to the Bowling Green 4 69 kV substation.

A. BOWLING GREEN 138 kV TRANSMISSION LINE

NORTHEAST TRANSMISSION DEVELOPMENT

The primary component of the Project is a new approximately 9-mile 138 kV overhead single circuit transmission line interconnecting the existing Lemoyne to West End Fostoria 138 kV line to a new 138/69 kV substation (Bowling Green 4 138 kV). The representative route is located in Wood County, Ohio.

B. BOWLING GREEN 4 138/69 kV SUBSTATION

The second component of the Project is a new 138/69 kV substation with the new 138 kV single circuit line from the existing Lemoyne to West End Fostoria 138 kV line connected to two 138/69 kV transformers and both interconnecting to the existing Bowling Green 4 69 kV substation. The new Bowling Green 4 138/69 kV substation is proposed to be located on privately-owned land in Wood County, Ohio.

C. BOWLING GREEN 69 kV SUBSTATION INTERCONNECTION

The third component of the Project consists of interconnecting to the existing Bowling Green 4 69 kV substation and associated terminal improvements. This work would be completed by the incumbent transmission owner.

6. CHERRYTREE - FRANKLIN

The Project consists of a new approximately 24-mile 115 kV single circuit transmission line from the new CherryTree 115 kV switching station along the existing Union City-Titusville 115 kV transmission line and the Titusville-Grandview 115 kV transmission line to the new Franklin 115 kV substation along the existing Wayne-Geneva 115 kV transmission line and the Air Products-Morgan Street 115 kV transmission line.

A. CHERRYTREE 115 kV SWITCHING STATION

The first component of the Project is a new 115 kV switching station interconnecting the existing Union City-Titusville 115 kV transmission line and the Titusville-Grandview 115 kV with the new CherryTree-Franklin 115 kV transmission line. The new CherryTree 115 kV switching station is proposed to be located on privately-owned land in Venango County, Pennsylvania.

B. CHERRYTREE 115 kV TRANSMISSION INTERCONNECTION

The second component of the Project is constructing 4 new towers to connect the existing transmission lines into the new CherryTree 115 kV switching station. NTD anticipates completing this work.

C. CHERRYTREE - FRANKLIN 115 kV TRANSMISSION LINE

The primary component of the Project is a new approximately 24-mile 115 kV overhead single circuit transmission line interconnecting the new CherryTree 115 kV switching station to a new Franklin 115 kV

NORTHEAST TRANSMISSION DEVELOPMENT

switching station. The representative route is located in Venango County and Crawford County, Pennsylvania.

D. FRANKLIN 115 kV SWITCHING STATION

The fourth component of the Project is a new 115 kV switching station interconnecting the new line from CherryTree to the existing Wayne-Geneva 115 kV transmission line and the Air Products-Morgan Street 115 kV transmission line. The new Franklin 115 kV switching station is proposed to be located on privately-owned land in Crawford County, Pennsylvania.

E. FRANKLIN 115 kV TRANSMISSION INTERCONNECTION

The fifth component of the Project is constructing 4 new towers to connect the existing transmission lines into the new Franklin 115 kV switching station. NTD anticipates completing this work.

7. CHERRYTREE - MORGAN STREET

The Project consists of a new approximately 28-mile 115 kV single circuit transmission line from the new CherryTree 115 kV switching station along the existing Union City-Titusville 115 kV transmission line and the Titusville-Grandview 115 kV transmission line to the existing Morgan Street 115 kV substation.

A. CHERRYTREE 115 kV SWITCHING STATION

The first component of the Project is a new 115 kV switching station interconnecting the existing Union City-Titusville 115 kV transmission line and the Titusville-Grandview 115 kV with the new CherryTree-Morgan Street 115 kV transmission line. The new CherryTree 115 kV switching station is proposed to be located on privately-owned land in Venango County, Pennsylvania.

B. CHERRYTREE 115 kV TRANSMISSION INTERCONNECTION

The second component of the Project is constructing 4 new towers to connect the existing transmission lines into the new CherryTree 115 kV switching station. NTD anticipates completing this work.

C. CHERRYTREE - MORGAN STREET 115 kV TRANSMISSION LINE

The primary component of the Project is a new approximately 28-mile 115 kV overhead single circuit transmission line interconnecting the new CherryTree 115 kV switching station to the existing Morgan Street 115 kV substation. The representative route is located in Venango County and Crawford County, Pennsylvania.

D. MORGAN STREET 115 kV SUBSTATION INTERCONNECTION

NORTHEAST TRANSMISSION DEVELOPMENT

The fourth component of the Project consists of interconnecting to the existing Morgan Street 115 kV substation and associated terminal improvements. This work would be completed by the incumbent transmission owner.

8. CHERRYTREE - WAYNE

The Project consists of a new approximately 18-mile 115 kV single circuit transmission line from the new CherryTree 115 kV switching station along the existing Union City-Titusville 115 kV transmission line and the Titusville-Grandview 115 kV transmission line to the existing Wayne 115 kV substation.

A. CHERRYTREE 115 kV SWITCHING STATION

The first component of the Project is a new 115 kV switching station interconnecting the existing Union City-Titusville 115 kV transmission line and the Titusville-Grandview 115 kV with the new CherryTree-Wayne 115 kV transmission line. The new CherryTree 115 kV switching station is proposed to be located on privately-owned land in Venango County, Pennsylvania.

B. CHERRYTREE 115 kV TRANSMISSION INTERCONNECTION

The second component of the Project is constructing 4 new towers to connect the existing transmission lines into the new CherryTree 115 kV switching station. NTD anticipates completing this work.

C. CHERRYTREE - WAYNE 115 kV TRANSMISSION LINE

The primary component of the Project is a new approximately 18-mile 115 kV overhead single circuit transmission line interconnecting the new CherryTree 115 kV switching station to the existing Wayne 115 kV substation. The representative route is located in Venango County and Crawford County, Pennsylvania.

D. WAYNE 115 kV SUBSTATION INTERCONNECTION

The fourth component of the Project consists of interconnecting to the existing Wayne 115 kV substation and associated terminal improvements. This work would be completed by the incumbent transmission owner.

E. FRANKLIN SWITCH

The fifth component of the Project consists of closing the switch at the existing Franklin 115 kV switching station. This work would be completed by the incumbent transmission owner.

NORTHEAST TRANSMISSION DEVELOPMENT

9. EAST WINDSOR - WYCKOFF/ENGLISHTOWN

The Project consists of a new approximately 3-mile 115 kV double circuit transmission line from the existing Wyckoff to Englishtown 115 kV transmission line to a new 230/115 kV substation ("East Windsor 115 kV") which interconnects to the existing East Windsor 230 kV substation.

A. EAST WINDSOR - WYCKOFF/ENGLISHTOWN 115 kV TRANSMISSION LINE

The first component of the Project is a new approximately 3-mile 115 kV overhead double circuit transmission line interconnecting the existing Wyckoff to Englishtown 115 kV line to a new 230/115 kV substation (East Windsor 115 kV). The representative route is located in Mercer County, New Jersey.

B. EAST WINDSOR 230/115 kV SUBSTATION

The second component of the Project is a new 230/115 kV substation interconnecting the new 115 kV overhead double circuit line from the existing Wyckoff to Englishtown 115 kV line with the existing East Windsor 230 kV substation. The new East Windsor 230/115 kV substation is proposed to be located on privately-owned land in Mercer County, New Jersey.

C. EAST WINDSOR 230 kV SUBSTATION INTERCONNECTION

The third component of the Project consists of interconnecting to the existing East Windsor 230 kV substation and associated terminal improvements. This work would be completed by the incumbent transmission owner.

10. ENGLISHTOWN

The Project consists of a new 500/230 kV substation interconnecting the existing Deans to Smithburg 500 kV transmission line to the existing Englishtown 230 kV substation.

A. ENGLISHTOWN 500 kV SUBSTATION

The primary component of the Project consists of a new 500/230 kV substation interconnecting the existing Deans to Smithburg 500 kV transmission line to the existing Englishtown 230 kV substation. The new Englishtown 500 kV substation is proposed to be located on privately-owned land in Monmouth County, New Jersey.

B. ENGLISHTOWN 500 kV TRANSMISSION INTERCONNECTION

The second component of the Project is constructing 2 new towers to connect the existing transmission lines into the new Englishtown 500/230 kV substation. NTD anticipates completing this work.

C. ENGLISHTOWN 230 kV SUBSTATION INTERCONNECTION

NORTHEAST TRANSMISSION DEVELOPMENT

The third component of the Project consists of interconnecting to the existing Englishtown 230 kV substation and associated terminal improvements. This work would be completed by the incumbent transmission owner.

11. GRAND POINT - CARLISLE PIKE - OPTION 1

The Project consists of a new approximately 13-mile 115 kV single circuit transmission line from a new 138/115 kV substation (Grand Point 115 kV), which interconnects to the existing Grand Point 138 kV substation, to the existing Carlisle Pike 115 kV substation.

A. GRAND POINT 138 kV SUBSTATION INTERCONNECTION

The first component of the Project consists of interconnecting to the existing Grand Point 138 kV substation and associated terminal improvements. This work would be completed by the incumbent transmission owner.

B. GRAND POINT 138/115 kV SUBSTATION

The second component of the Project is a new 138/115 kV substation interconnecting the new 115 kV overhead single circuit line from the existing Carlisle Pike 115 kV substation with the existing Grand Point 138 kV substation. The new Grand Point 138/115 kV substation is proposed to be located on privately-owned land in Franklin County, Pennsylvania.

C. GRAND POINT - CARLISLE PIKE 115 kV TRANSMISSION LINE

The third component of the Project is a new approximately 13-mile 115 kV single circuit transmission line from a new Grand Point 138/115 kV substation to the existing Carlisle Pike 115 kV substation. The representative route is located in Franklin County and Cumberland County, Pennsylvania.

D. CARLISLE PIKE 115 kV SUBSTATION INTERCONNECTION

The fourth component of the Project consists of interconnecting to the existing Carlisle Pike 115 kV substation and associated terminal improvements. This work would be completed by the incumbent transmission owner.

12. GRAND POINT - CARLISLE PIKE - OPTION 2

The Project consists of a new approximately 13-mile 138 kV single circuit transmission line from the existing Grand Point 138 kV substation a new Carlisle Pike 138/115 kV substation, which interconnects to the existing Carlisle Pike 115 kV substation.

A. GRAND POINT 138 kV SUBSTATION INTERCONNECTION

NORTHEAST TRANSMISSION DEVELOPMENT

The first component of the Project consists of interconnecting to the existing Grand Point 138 kV substation and associated terminal improvements. This work would be completed by the incumbent transmission owner.

B. GRAND POINT - CARLISLE PIKE 115 kV TRANSMISSION LINE

The second component of the Project is a new approximately 13-mile 138 kV single circuit transmission line from the existing Grand Point 138 kV substation to a new Carlisle Pike 138/115 kV substation. The representative route is located in Franklin County and Cumberland County, Pennsylvania.

C. CARLISLE PIKE 138/115 kV SUBSTATION

The third component of the Project is a new 138/115 kV substation interconnecting the new 138 kV overhead single circuit line from the existing Grand Point 138 kV substation with the existing Carlisle Pike 115 kV substation. The new Carlisle Pike 138/115 kV substation is proposed to be located on privately-owned land in Cumberland County, Pennsylvania.

D. CARLISLE PIKE 115 kV SUBSTATION INTERCONNECTION

The fourth component of the Project consists of interconnecting to the existing Carlisle Pike 115 kV substation and associated terminal improvements. This work would be completed by the incumbent transmission owner.

13. GRAND POINT - ROXBURY - OPTION 1

The Project consists of a new approximately 14-mile 115 kV single circuit transmission line from a new 138/115 kV substation (Grand Point 115 kV), which interconnects to the existing Grand Point 138 kV substation, to the existing Roxbury 115 kV substation.

A. GRAND POINT 138 kV SUBSTATION INTERCONNECTION

The first component of the Project consists of interconnecting to the existing Grand Point 138 kV substation and associated terminal improvements. This work would be completed by the incumbent transmission owner.

B. GRAND POINT 138/115 kV SUBSTATION

The second component of the Project is a new 138/115 kV substation interconnecting the new 115 kV overhead single circuit line from the existing Roxbury 115 kV substation with the existing Grand Point 138 kV substation. The new Grand Point 138/115 kV substation is proposed to be located on privately-owned land in Franklin County, Pennsylvania.

C. GRAND POINT - ROXBURY 115 kV TRANSMISSION LINE

NORTHEAST TRANSMISSION DEVELOPMENT

The third component of the Project is a new approximately 14-mile 115 kV single circuit transmission line from a new Grand Point 138/115 kV substation to the existing Roxbury 115 kV substation. The representative route is located in Franklin County, Pennsylvania.

D. ROXBURY 115 kV SUBSTATION INTERCONNECTION

The fourth component of the Project consists of interconnecting to the existing Roxbury 115 kV substation and associated terminal improvements. This work would be completed by the incumbent transmission owner.

14. GRAND POINT - ROXBURY - OPTION 2

The Project consists of a new approximately 14-mile 138 kV single circuit transmission line from the existing Grand Point 138 kV substation to the existing Roxbury 115 kV substation.

A. GRAND POINT 138 kV SUBSTATION INTERCONNECTION

The first component of the Project consists of interconnecting to the existing Grand Point 138 kV substation and associated terminal improvements. This work would be completed by the incumbent transmission owner.

B. GRAND POINT - ROXBURY 115 kV TRANSMISSION LINE

The second component of the Project is a new approximately 14-mile 138 kV single circuit transmission line from the existing Grand Point 138 kV substation to the existing 115 kV Roxbury substation. The representative route is located in Franklin County, Pennsylvania.

C. CARLISLE PIKE 138/115 kV TRANSFORMER AND INTERCONNECTION

The third component of the Project consists of a new 138/115 kV transformer interconnecting to the existing Carlisle Pike 115 kV substation and associated terminal improvements. This work would be completed by the incumbent transmission owner.

15. GRANDVIEW - FRANKLIN

The Project consists of a new approximately 27-mile 115 kV single circuit transmission line from the existing Grandview 115 kV substation to the new Franklin 115 kV switching station along the existing Wayne-Geneva 115 kV transmission line and the Air Products-Morgan Street 115 kV transmission line.

A. GRANDVIEW 115 kV SUBSTATION INTERCONNECTION

NORTHEAST TRANSMISSION DEVELOPMENT

The first component of the Project consists of interconnecting to the existing Grandview 115 kV substation and associated terminal improvements. This work would be completed by the incumbent transmission owner.

B. GRANDVIEW - FRANKLIN 115 kV TRANSMISSION LINE

The primary component of the Project is a new approximately 27-mile 115 kV overhead single circuit transmission line interconnecting the existing Grandview 115 kV substation to a new Franklin 115 kV switching station. The representative route is located in Venango County and Crawford County, Pennsylvania.

C. FRANKLIN 115 kV SWITCHING STATION

The third component of the Project is a new 115 kV switching station interconnecting the new line from Grandview to the existing Wayne-Geneva 115 kV transmission line and the Air Products-Morgan Street 115 kV transmission line. The new Franklin 115 kV switching station is proposed to be located on privately-owned land in Crawford County, Pennsylvania.

D. FRANKLIN 115 kV TRANSMISSION INTERCONNECTION

The fourth component of the Project is constructing 4 new towers to connect the existing transmission lines into the new Franklin 115 kV switching station. NTD anticipates completing this work.

16. GRANDVIEW - MORGAN STREET

The Project consists of a new approximately 31-mile 115 kV single circuit transmission line from the existing Grandview 115 kV substation to the existing Morgan Street 115 kV substation.

A. GRANDVIEW 115 kV SUBSTATION INTERCONNECTION

The first component of the Project consists of interconnecting to the existing Grandview 115 kV substation and associated terminal improvements. This work would be completed by the incumbent transmission owner.

B. GRANDVIEW - MORGAN STREET 115 kV TRANSMISSION LINE

The primary component of the Project is a new approximately 31-mile 115 kV overhead single circuit transmission line interconnecting the existing Grandview 115 kV substation to the existing Morgan Street 115 kV substation. The representative route is located in Venango County and Crawford County, Pennsylvania.

C. MORGAN STREET 115 kV SUBSTATION INTERCONNECTION

NORTHEAST TRANSMISSION DEVELOPMENT

The third component of the Project consists of interconnecting to the existing Morgan Street 115 kV substation and associated terminal improvements. This work would be completed by the incumbent transmission owner.

17. GRANDVIEW - WAYNE

The Project consists of a new approximately 21-mile 115 kV single circuit transmission line from the existing Grandview 115 kV substation to the existing Wayne 115 kV substation.

A. GRANDVIEW 115 kV SUBSTATION INTERCONNECTION

The first component of the Project consists of interconnecting to the existing Grandview 115 kV substation and associated terminal improvements. This work would be completed by the incumbent transmission owner.

B. GRANDVIEW - WAYNE 115 kV TRANSMISSION LINE

The primary component of the Project is a new approximately 21-mile 115 kV overhead single circuit transmission line interconnecting the existing Grandview 115 kV substation to the existing Wayne 115 kV substation. The representative route is located in Venango County and Crawford County, Pennsylvania.

C. WAYNE 115 kV SUBSTATION INTERCONNECTION

The third component of the Project consists of interconnecting to the existing Wayne 115 kV substation and associated terminal improvements. This work would be completed by the incumbent transmission owner.

D. FRANKLIN SWITCH

The fourth component of the Project consists of closing the switch at the existing Franklin 115 kV switching station. This work would be completed by the incumbent transmission owner.

18. GRASSY CREEK

The Project consists of a new Grassy Creek 138 kV switching station connecting the existing Summerfield to Switzer 138 kV transmission line, the Steamtown Skid to Natrium 138 kV transmission line and the Tap to Somerton 138 kV transmission line.

A. GRASSY CREEK 138 kV SWITCHING STATION

The primary component of the Project is a new 138 kV switching station interconnecting the existing Summerfield to Switzer 138 kV transmission line, the Steamtown Skid to Natrium 138 kV transmission

NORTHEAST TRANSMISSION DEVELOPMENT

line and the Tap to Somerton 138 kV transmission line. The new Grassy Creek 138 kV switching station is proposed to be located on privately-owned land in Monroe County, Ohio.

B. GRASSY CREEK 138 kV TRANSMISSION INTERCONNECTION

The second component of the Project is constructing 5 new towers to connect the existing transmission lines into the new Grassy Creek 138 kV switching station. NTD anticipates completing this work.

19. GREAT BRANCH

The Project consists of a new Great Branch 230 kV switching station connecting the existing Chesterfield to Ironbridge 230 kV transmission line, the existing Chesterfield to Basin 230 kV transmission line and the existing Ironbridge to Spruance 230 kV transmission line.

A. GREAT BRANCH 230 kV SWITCHING STATION

The primary component of the Project is a new Great Branch 230 kV switching station connecting the existing Chesterfield to Ironbridge 230 kV transmission line, the existing Chesterfield to Basin 230 kV transmission line and the existing Ironbridge to Spruance 230 kV transmission line. The new Great Branch 230 kV switching station is proposed to be located on privately-owned land in Chesterfield County, Virginia.

B. GREAT BRANCH 230 kV TRANSMISSION INTERCONNECTION

The second component of the Project is constructing 6 new towers to connect the existing transmission lines into the new Great Branch 230 kV switching station. NTD anticipates completing this work.

20. GREEN RIDGE - CARLISLE PIKE

The Project consists of a new approximately 6-mile 115 kV single circuit transmission line from the previously proposed 500/138 kV Green Ridge substation to the existing 115 kV Carlisle Pike.

A. GREEN RIDGE 138/115 kV SUBSTATION AND INTERCONNECTION

The first component of the Project consists of a new 138/115 kV substation interconnecting to the previously proposed Green Ridge 138 kV substation and associated terminal improvements. The Green Ridge 138/115 kV substation is proposed to be located on privately-owned land in Franklin County, Pennsylvania.

B. GREEN RIDGE - CARLISLE PIKE 115 kV TRANSMISSION LINE

NORTHEAST TRANSMISSION DEVELOPMENT

The second component of the Project is a new approximately 6-mile 115 kV single circuit transmission line from the Green Ridge 138/115 kV substation to the existing Carlisle Pike 115 kV substation. The representative route is located in Franklin County and Cumberland County, Pennsylvania.

C. CARLISLE PIKE 115 kV SUBSTATION INTERCONNECTION

The third component of the Project consists of interconnecting to the existing Carlisle Pike 115 kV substation and associated terminal improvements. This work would be completed by the incumbent transmission owner.

21. MOUNTAIN - CARLISLE PIKE

The Project consists of a new approximately 20-mile 115 kV single circuit transmission line from the existing Mountain 115 kV substation to the existing Carlisle Pike 115 kV substation.

A. MOUNTAIN 115 kV SUBSTATION INTERCONNECTION

The first component of the Project consists of interconnecting to the existing Mountain 115 kV substation and associated terminal improvements. This work would be completed by the incumbent transmission owner.

B. MOUNTAIN - CARLISLE PIKE 115 kV TRANSMISSION LINE

The second component of the Project is a new approximately 20-mile 115 kV single circuit transmission line from the existing Mountain 115 kV substation to the existing Carlisle Pike 115 kV substation. The representative route is located in Cumberland County, Pennsylvania.

C. CARLISLE PIKE 115 kV SUBSTATION INTERCONNECTION

The third component of the Project consists of interconnecting to the existing Carlisle Pike 115 kV substation and associated terminal improvements. This work would be completed by the incumbent transmission owner.

22. NEWTON FALLS - FRANKLIN

The Project consists of a new approximately 7-mile 138 kV single circuit transmission line from the existing Newton Falls 138 kV substation to the existing Franklin 138 kV substation.

A. NEWTON FALLS 138 kV SUBSTATION INTERCONNECTION

The first component of the Project consists of interconnecting to the existing Newton Falls 138 kV substation and associated terminal improvements. This work would be completed by the incumbent transmission owner.

NORTHEAST TRANSMISSION DEVELOPMENT

B. NEWTON FALLS - FRANKLIN 138 kV TRANSMISSION LINE

The second component of the Project is a new approximately 7-mile 138 kV single circuit transmission line from the existing Newton Falls 138 kV substation to the existing Franklin 138 kV substation. The representative route is located in Trumbull County, Ohio.

C. FRANKLIN 138 kV SUBSTATION INTERCONNECTION

The third component of the Project consists of interconnecting to the existing Franklin 138 kV substation and associated terminal improvements. This work would be completed by the incumbent transmission owner.

23. REEDY CREEK

The Project consists of a new Great Branch 230 kV switching station connecting the existing Chesterfield to Ironbridge 230 kV transmission line, the existing Chesterfield to Basin 230 kV transmission line and the existing Ironbridge to Spruance 230 kV transmission line. In addition, it would consist of a new Reedy Creek 230 kV switching station connecting the existing Ironbridge to Southwest 230 kV transmission line, the existing Ironbridge to Hull Street Road 230 kV transmission line and the existing Hull Street Road to Southwest 230 kV transmission line.

A. GREAT BRANCH 230 kV SWITCHING STATION

The first component of the Project is a new Great Branch 230 kV switching station connecting the existing Chesterfield to Ironbridge 230 kV transmission line, the existing Chesterfield to Basin 230 kV transmission line and the existing Ironbridge to Spruance 230 kV transmission line. The new Great Branch 230 kV switching station is proposed to be located on privately-owned land in Chesterfield County, Virginia.

B. GREAT BRANCH 230 kV TRANSMISSION INTERCONNECTION

The second component of the Project is constructing 6 new towers to connect the existing transmission lines into the new Great Branch 230 kV switching station. NTD anticipates completing this work.

C. REEDY CREEK 230 kV SWITCHING STATION

The third component of the Project is a new Reedy Creek 230 kV switching station connecting the existing Ironbridge to Southwest 230 kV transmission line, the existing Ironbridge to Hull Street Road 230 kV transmission line and the existing Hull Street Road to Southwest 230 kV transmission line. The new Reedy Creek 230 kV switching station is proposed to be located on privately-owned land in Chesterfield County, Virginia.

D. REEDY CREEK 230 kV TRANSMISSION INTERCONNECTION

NORTHEAST TRANSMISSION DEVELOPMENT

The fourth component of the Project is constructing 6 new towers to connect the existing transmission lines into the new Reedy Creek 230 kV switching station. NTD anticipates completing this work.

24. ROGERS ROAD - CARSON

The Project consists of a new approximately 29-mile 500 kV single circuit transmission line from the planned Rogers Road 500 kV switching station to the existing Carson 500 kV substation.

A. ROGERS ROAD 500 kV SWITCHING STATION INTERCONNECTION

The first component of the Project consists of interconnecting to the planned Rogers Road 500 kV switching station and associated terminal improvements. This work would be completed by the incumbent transmission owner.

B. ROGERS ROAD - CARSON 500 kV TRANSMISSION LINE

The second component of the Project is a new approximately 29-mile 500 kV single circuit transmission line from the proposed Rogers Road 500 kV switching station to the existing Carson 500 kV substation. The representative route is located in Greensville County, Sussex County and Dinwiddie County, Virginia.

C. CARSON 500 kV SUBSTATION INTERCONNECTION

The third component of the Project consists of interconnecting to the existing Carson 500 kV substation and associated terminal improvements. This work would be completed by the incumbent transmission owner.

25. ROGERS ROAD - CLUBHOUSE

The Project consists of a new approximately 5-mile 230 kV transmission line from a new Rogers Road 500/230 kV substation, which interconnects to the planned Rogers Road 500 kV switching station, to the existing Clubhouse 230 kV substation.

A. ROGERS ROAD 500 kV SUBSTATION INTERCONNECTION

The first component of the Project consists of interconnecting to the planned Rogers Road 500 kV substation and associated terminal improvements. This work would be completed by the incumbent transmission owner.

B. ROGERS ROAD 500/230 kV SUBSTATION

The second component of the Project is a new 500/230 kV substation interconnecting the new 230 kV overhead single circuit line from the existing Clubhouse 230 kV substation with the planned Rogers Road

NORTHEAST TRANSMISSION DEVELOPMENT

500 kV substation. The new Rogers Road 500/230 kV substation is proposed to be located on privately-owned land in Greensville County, Virginia.

C. ROGERS ROAD - CLUBHOUSE 230 kV TRANSMISSION LINE

The third component of the Project is a new approximately 5-mile 230 kV single circuit transmission line from the new Rogers Road 500/230 kV substation to the existing Clubhouse 230 kV substation. The representative route is located in Franklin County and Cumberland County, Pennsylvania.

D. CLUBHOUSE 230 kV SUBSTATION INTERCONNECTION

The fourth component of the Project consists of interconnecting to the existing Clubhouse 230 kV substation and associated terminal improvements. This work would be completed by the incumbent transmission owner.

26. SAND BRANCH

The Project consists of a new Sand Branch 345/138 kV substation interconnecting the existing Kanawha River-Matt Funk 345 kV line, the Bradley-Dameron 138 kV line and the Bradley-Pole Yard 138 kV line.

A. SAND BRANCH 345/138 kV SUBSTATION

The primary component of the Project is a new Sand Branch 345/138 kV substation interconnecting the existing Kanawha River-Matt Funk 345 kV line, the Bradley-Dameron 138 kV line and the Bradley-Pole Yard 138 kV line. The new Sand Branch 345/138 substation is proposed to be located on privately-owned land in Raleigh County, West Virginia.

B. SAND BRANCH 345/138 kV TRANSMISSION INTERCONNECTION

The second component of the Project is constructing 6 new towers to connect the existing transmission lines into the new Sand Branch 345/138 kV substation. NTD anticipates completing this work.

27. STONY HILL - OPTION 1

The Project consists of a new Stony Hill 138 kV switching station connecting the existing Shenango to Masury 138 kV transmission line, the Shenango to LTV Steel 138 kV transmission line and the Lincoln Park to Elwood 138 kV transmission line.

A. STONY HILL 138 kV SWITCHING STATION

The primary component of the Project is a new Stony Hill 138 kV switching station connecting the existing Shenango to Masury 138 kV transmission line, the Shenango to LTV Steel 138 kV transmission

NORTHEAST TRANSMISSION DEVELOPMENT

line and the Lincoln Park to Elwood 138 kV transmission line. The new Stony Hill 138 kV switching station is proposed to be located on privately-owned land in Trumbull County, Ohio.

B. STONY HILL 138 kV TRANSMISSION INTERCONNECTION

The second component of the Project is constructing 6 new towers to connect the existing transmission lines into the new Stony Hill 138 kV switching station. NTD anticipates completing this work.

28. STONY HILL - OPTION 2

The Project consists of a new Stony Hill 138 kV switching station connecting the existing Shenango to Masury 138 kV transmission line and the existing Lincoln Park to Elwood 138 kV transmission line.

A. STONY HILL 138 kV SWITCHING STATION

The primary component of the Project is a new Stony Hill 138 kV switching station connecting the existing Shenango to Masury 138 kV transmission line and the existing Lincoln Park to Elwood 138 kV transmission line. The new Stony Hill 138 kV switching station is proposed to be located on privately-owned land in Trumbull County, Ohio.

B. STONY HILL 138 kV TRANSMISSION INTERCONNECTION

The second component of the Project is constructing 4 new towers to connect the existing transmission lines into the new Stony Hill 138 kV switching station. NTD anticipates completing this work.

29. STONY HILL - OPTION 3

The Project consists of a new Stony Hill 138 kV switching station connecting the existing Shenango to LTV Steel 138 kV transmission line and the existing Lincoln Park to Elwood 138 kV transmission line.

A. STONY HILL 138 kV SWITCHING STATION

The primary component of the Project is a new Stony Hill 138 kV switching station connecting the existing Shenango to LTV Steel 138 kV transmission line and the existing Lincoln Park to Elwood 138 kV transmission line. The new Stony Hill 138 kV switching station is proposed to be located on privately-owned land in Mahoning County, Ohio.

B. STONY HILL 138 kV TRANSMISSION INTERCONNECTION

The second component of the Project is constructing 4 new towers to connect the existing transmission lines into the new Stony Hill 138 kV switching station. NTD anticipates completing this work.

NORTHEAST TRANSMISSION DEVELOPMENT

30. WICK

The Project consists of a new Wick 138 kV switching station near the Masury to Salt Springs 138 kV line with a new approximately 5-mile double circuit connection to the Central Niles to Garden 138 kV line.

A. WICK - CENTRAL NILES/GARDEN 138 kV TRANSMISSION LINE

The first component of the Project is a new approximately 5-mile 138 kV overhead double circuit transmission line interconnecting a new 138 kV Wick switching station to the existing Central Niles to Garden 138 kV line. The representative route is located in Trumbull County, Ohio.

B. WICK SWITCHING STATION

The second component of the Project is a new Wick 138 kV switching station connecting the new 138 kV double circuit line from the existing Central Niles to Garden 138 kV line with the existing Masury to Salt Springs 138 kV line. The new Wick 138 kV switching station is proposed to be located on privately-owned land in Trumbull County, Ohio.

C. WICK 138 kV TRANSMISSION INTERCONNECTION

The third component of the Project is constructing 2 new towers to connect the existing transmission lines into the new Wick 138 kV switching station. NTD anticipates completing this work.

D. ANALYTICAL ASSESSMENT

The Project one-line diagrams can be found in *Appendix C* and a preliminary sketch of the proposed configuration can be found in *Appendix D*.

NTD determined the technical specifications for each Project including ratings and impedances, which are each specified in the modeling files submitted for review by PJM. NTD has completed an extensive modeling effort to evaluate the merits of the Projects. The model results demonstrate that the Projects will resolve potential reliability criteria violations as identified in *Appendix E*.

NTD conducted a power flow contingency analysis using the power flow case and contingency files provided by PJM to identify any potential violations of thermal ratings due to the addition of a Project. NTD's analysis showed no Projects created new thermal overloads on the PJM system.

E. COST

1. PROJECT COST ESTIMATES

The total cost for each Project, both in current year dollars and in-service year dollars, and a detailed breakdown of estimated costs for each component of each Project is identified in *Appendix F*.

An estimated yearly cash flow for each Project is included as *Appendix G*.

NORTHEAST TRANSMISSION DEVELOPMENT

F. SCHEDULE

NTD has prepared execution plans for all Project components outlining major Project development, construction and operations activities. NTD identified and evaluated any potential fatal flaws for all Projects and confirmed the preliminary feasibility of each Project proposed for consideration by PJM. A detailed conceptual schedule for each proposed Project component can be found in *Appendix K*. NTD's schedule allots sufficient time to complete each aspect of the Project to meet an in-service date of June 1, 2020 including sufficient float to avoid a delay in the event of unforeseen issues.

LS Power will assign a Project Director to oversee the Project through development, construction and operations/maintenance. *Appendix L* contains an organizational chart depicting the management structure NTD intends to implement the Project. The following sections summarize each of the major activities during the development, construction, and operations and maintenance phases of the Project.

A. SITE SELECTION/ROUTING ANALYSIS

NTD will conduct a detailed analysis to identify preferred and alternative routes/sites taking into consideration factors such as safety, environmental impacts and land use. The detailed analysis will include data collection, field evaluation, environmental review, engineering analysis, right-of-way review and agency and public review. The detailed analysis will identify all information necessary to support development of the application for any siting approval process.

B. COMMUNITY AND LANDOWNER ENGAGEMENT

NTD will identify and engage stakeholders, such as community officials and landowners within the Project area, early in the process and maintain an active dialogue throughout. Public meetings may be held to offer a venue for landowners and other interested community members to learn about the Project and for NTD to learn more about specific landowner and community preferences. NTD plans to make information available on its website and provide notification of public meetings to landowners within the Project area as required in the siting approval process.

C. PERMITTING

As with all of LS Power's development projects, LS Power employees will directly oversee all Project permitting activities. From senior management to project managers and environmental, electrical and project engineers to support services including legal, administrative, regulatory and others, the Project will benefit from LS Power's detail-oriented and hands-on philosophy. In addition to LS Power personnel, NTD will utilize qualified third-party firms to support permitting and development efforts. In its experience, LS Power has found that working with local consultants and legal counsel provides both invaluable insight and the benefit of established relationships with permitting agencies. Additionally, LS Power has strong working relationships with numerous equipment manufacturers, suppliers, contractors and engineers to provide specialized technical data as necessary to support permitting; such

NORTHEAST TRANSMISSION DEVELOPMENT

information includes, for example, the most current equipment offerings and respective performance data, construction techniques to minimize impacts and permitting complexity and procurement and installation schedules. NTD has already held preliminary discussions with third-party support firms to confirm expectations on schedule and feasibility for permitting processes, procurement and construction, which information is incorporated in this Proposal. NTD will be involved in each step of the development process, carefully managing and reviewing work to ensure the various aspects of the Project fit together upon completion, ultimately being financeable and constructible.

D. SITING APPROVAL

Most high-voltage transmission projects will require a state siting approval. To begin the siting approval process, NTD plans to hold pre-application meetings with the regulatory agency to introduce NTD and the Project, as well as confirm its understanding of the process. Shortly thereafter, NTD will simultaneously begin collecting siting data and start its outreach efforts so that public siting input is incorporated at the earliest stages of the Project. Once NTD identifies a preferred site/route and at least one viable alternative site/route, NTD will carry out the environmental and detailed engineering work described in the Site Selection/Routing Analysis section above in order to establish a highly-detailed Project plan to support the siting applications.

E. WETLANDS AND WATERWAYS

All proposed Projects were sited to avoid and minimize impacts to wetlands or other areas of environmental concern based on GIS data. It is possible that a Project cannot avoid impacts to a limited number of wetlands and waterways. If so, NTD expects the Project will be subject to regulation under certain permitting programs, namely Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, and Section 401 of the Clean Water Act. NTD will engage a qualified consultant to conduct a wetlands delineation of the selected site/route in order to establish the extent of proposed impacts and the need for specific permits from the state or U.S. Army Corps of Engineers.

F. VARIOUS MINOR PERMITS

In addition to the permits described above, NTD has identified other permits which may be required for the construction of the Project. NTD considers these permits to be minor due to the more limited effort to prepare applications and the less intensive permitting processes which follow. These include permits related to airspace clearance, stormwater/erosion and sedimentation control, road crossings, and utility and railroad crossings.

G. RIGHT-OF-WAY ACQUISITION

The Project will be located primarily on new right-of-way to be acquired by NTD predominately in the form of easements. NTD will assign a Right-of-Way Manager to oversee all real estate related activities for the Project including appraisals, title work, surveying, land acquisition and restoration.

NORTHEAST TRANSMISSION DEVELOPMENT

A land valuation study will be prepared to establish acreage values for the Project area to serve as the basis for consistent offers for securing easements. Title work will be prepared for each parcel and provided to the survey team for use in preparing legal descriptions for each easement. A right-of-way agent will contact each property owner in person to explain the Project and, as necessary, secure permission to conduct surveys, archaeological studies, etc. Right-of-way agents will be the primary point of contact and negotiate with property owners to acquire the easements on a mutually agreeable basis. To the extent that negotiations reach an impasse, NTD will be able to pursue eminent domain. The right-of-way agents will continue to act as a liaison with the property owners during construction and through the restoration process.

H. PROJECT CONSTRUCTION

NTD intends to follow the same approach for construction as was most recently used to construct the Cross Texas Transmission facilities in Texas. NTD will assign a Construction Manager, an Engineering Manager and a Permit/Compliance Manager to oversee, construction, engineering and compliance activities. This will include quality assurance, field inspectors, coordination activities, outage planning, document control, and various specialists. *Appendix L* provides an organizational structure depicting NTD's planned management arrangement.

NORTHEAST TRANSMISSION DEVELOPMENT

G. OPERATIONS/MAINTENANCE

For all Project components, NTD intends to follow the same approach for operations and maintenance as is being used for the Cross Texas Transmission Facilities in Texas. NTD will maintain a reliable system and ensure safety and compliance with all applicable codes and standards. NTD will assign a Planning and Operations Manager to oversee the planning, maintenance, real-time operations, and emergency response activities. NTD will actively monitor the condition of the Project, perform condition based maintenance activities and replace equipment as needed. *Appendix L* provides an organizational structure depicting NTD's planned management arrangement.

1. OPERATIONS PLAN

NTD will have a transmission operations center to provide 24/7 monitoring of the Project to monitor and control voltage levels, power flows, or other parameters of the Project, as well as implement procedures needed for emergency or planned maintenance.

2. MAINTENANCE PLAN

NTD will implement an active, thorough inspection and maintenance program for the Project consistent with industry practices including transmission line inspections, vegetative and right-of-way maintenance, and substation maintenance.