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# National Grid's 2018 Local Transmission Plan

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Engineering Manager

April 18, 2018



# Planning Horizon, Data, Assumptions, Tools

- Planning horizon required by NERC standards is 10 years; National Grid extends some studies to a 15 year horizon.
- LTP list contains projects for the 10 year horizon, 2018-2027.
- NYISO base cases for load flow and transient stability (FERC 715); PSS/E used for analysis
- NYISO data for short circuit studies; Aspen OneLiner used for analysis
- NYISO “gold book” forecasts for NY wide loads
- Adjustments to load in local areas where necessary to reflect non-coincident peaks (90/10), localized load growth

# LTP Information Available on Line

- The NYISO website provides a link to the National Grid project list:
  - Choose **Market Participants**
  - Then **NYISO Planning**
  - Select **Documents & Resources** in menu at left
  - Select **Local Transmission Plans** & filter to get the current plan
- National Grid's Project List can also be accessed directly at:  
*[www.nationalgridus.com/oasis/filings\\_studies.asp](http://www.nationalgridus.com/oasis/filings_studies.asp)*
- The National Grid Transmission Planning Guide is posted on our website under:
  - *[www.nationalgridus.com/transmission/c3-8\\_standocs.asp](http://www.nationalgridus.com/transmission/c3-8_standocs.asp)*
  - Then Click the link for Operations Documentation and then the link for:  
Transmission Planning Guide

# Project Status Description

Project Status Description	
<b>Concept</b>	Project is identified as solution to a need and it still requires internal and external approvals.
<b>Proposed</b>	National Grid has internally determined that the project is an appropriate solution to a need, but has not yet obtained System Impact Study (SIS) approval through the NYISO (if required).
<b>Planned (Firm)</b>	SIS has been approved (if required) and National Grid has management commitment to proceed with the project.
<b>Under Construction</b>	Project has siting approval, as required, and is under construction.
<b>In Service</b>	Project is complete and in commercial operation.

# April 2018 Update

- This is intended to be an incremental update to the November 2017 Local Transmission Plan
- The full plan can be found in the Appendix

# April 2018 Update (1 of 2)



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Primary Driver	Primary Equipment Owner	Other Equipment Owner(s)	Projected In-Service Month/Year	Major Project	Project	Updated Status	NYISO System Impact Study Status	Comments
<b>Western New York - Frontier</b>								
Reliability	National Grid, USA		01/2023	Western NY Reinforcement Project	Niagara-Gardenville #180 - Reconductor	Concept	Uncertain	
<b>Western New York - Genesee</b>								
<b>Western New York - Southwest</b>								
<b>Central New York - Northern</b>								
Reliability	National Grid, USA		06/2020		Taylorville Terminal Equipment Upgrades	Proposed	N/R	
Reliability	National Grid, USA		06/2020		Taylorville - Boonville Clearance Upgrades	Proposed	N/R	
Reliability	National Grid, USA		06/2020		Browns Falls Terminal Equipment Upgrades	Proposed	N/R	
Reliability	National Grid, USA		06/2020		Browns Falls - Taylorville Clearance Upgrades	Proposed	N/R	
Reliability	National Grid, USA		06/2020		Colton - Browns Falls Clearance Upgrades	Proposed	N/R	
Reliability	National Grid, USA		12/2024		Reconductor 8 miles of Thousand Island-Coffeen	Concept	Uncertain	
Reliability	National Grid, USA		12/2024		Coffeen Terminal Equipment Upgrades	Concept	Uncertain	
Reliability	National Grid, USA		12/2025		New 115kV Line - Lyme Junction to Indian River	Concept	Uncertain	
<b>Central New York - Utica / Rome</b>								
<b>Central New York - Syracuse/Cortland/Oswego</b>								
Reliability	National Grid, USA		06/2020		South Oswego-Indeck #6 - High Speed Reclosing	Concept	Uncertain	

# April 2018 Update (2 of 2)

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Primary Driver	Primary Equipment Owner	Other Equipment Owner(s)	Projected In-Service Month/Year	Major Project	Project	Updated Status	NYISO System Impact Study Status	Comments
<b>Eastern New York - Capital &amp; Hudson Valley</b>								
Reliability	National Grid, USA		03/2019		Replace 115kV Breakers at Rotterdam	Planned	N/R	
Interconnection	National Grid, USA		06/2019		Accommodate NYSEG Falls Park Station on Schodack-Churchtown	Firm	N/R	
Reliability	National Grid, USA		12/2024		Reconductor 115kV Inghams-St Johnsville	Concept	Uncertain	
Reliability	National Grid, USA		12/2024		Marshville Terminal Equipment Upgrades	Concept	Uncertain	
Reliability	National Grid, USA		12/2024		Reconductor 0.3mi 115kV St Johnsville - Marshville	Concept	Uncertain	
Reliability	National Grid, USA		12/2024		Reconductor 0.2 mi 115kV Ingham - Stoner	Concept	Uncertain	
Reliability	National Grid, USA		12/2024		Reconductor 0.3 mi Clinton Tap 15	Concept	Uncertain	
Reliability	National Grid, USA		12/2025		Reconductor 115kV Meco-Rotterdam & Stoner-Rotterdam	Concept	Uncertain	
<b>Eastern New York - Northeast</b>								
Reliability	National Grid, USA		03/2017		Reconductor Mohican-Luther Forest #3 115 kV (14.2 miles)	In Service	Approved	
Reliability	National Grid, USA		01/2019		Replace 115kV Breakers at North Troy	Under Construction	N/R	
Reliability	National Grid, USA		06/2019		Mohican-Butler Reconductor 3.5 miles	CANCELLED	N/R	Non-Firm in 2018 Gold Book

# LTP Communication

- Interested parties may submit written comments on National Grid's LTP within 30 days (May 18, 2018) to:

Mark Domino, Engineering Manager

Transmission Planning - NY

National Grid

300 Erie Blvd, West

Syracuse, NY 13202

- [TransmissionPlanning@nationalgrid.com](mailto:TransmissionPlanning@nationalgrid.com)
- Comments will be posted on the NYISO website.
- Modifications to the LTP discussed at the next LTP meeting.

# Questions?

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# Appendix

April 18, 2018 LTP



# Transmission Facilities Studied

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National Grid organizes its study reports by Transmission Planning Study Areas

## Transmission Planning Study Areas

### West

F – Frontier

G – Genesee

SW – Southwest

### Central

SOC – Syracuse Oswego Cortland

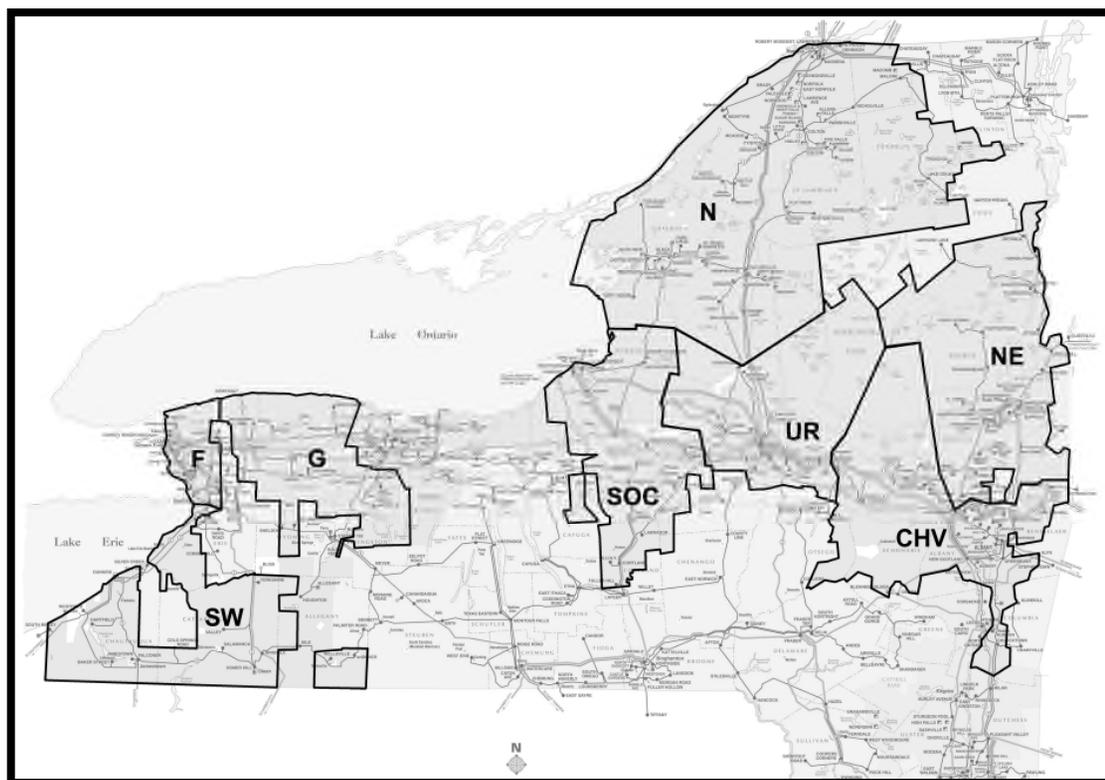
N – Northern

UR – Utica/Rome

### East

CHV – Capital Hudson Valley

NE - Northeast

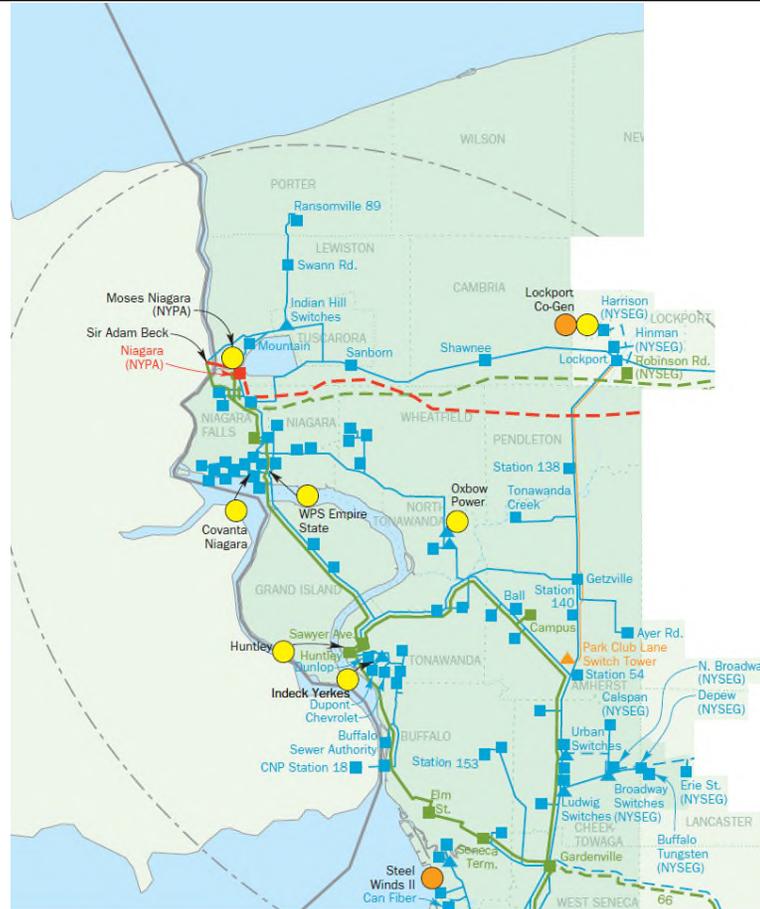


Note: Some National Grid transmission lines extend outside its retail service areas.  
Some lines within National Grid's retail service areas are not owned by National Grid.

# Western NY - Frontier

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# 2018 LTP – Western NY (Frontier 1 of 2)



Primary Driver	Primary Equipment Owner	Other Equipment Owner(s)	Projected In-Service Month/Year	Major Project	Project	Updated Status	NYISO System Impact Study Status	Comments
<b>Western New York - Frontier</b>								
Reliability	National Grid, USA		12/2017	Western NY Reinforcement Project	Reconductor part of Gardenville - Erie 115 kV circuit #54	In Service	Approved	
Reliability	National Grid, USA		03/2019		Addition of 4th Elm Street 240-24 kV transformer at substation (TR3)	Under Construction	N/R	
Load Growth	National Grid, USA		06/2019	New Subtransmission Supply Stations	Install 115-34.5kV substation at Ohio Street	Planned	N/R	
Load Growth	National Grid, USA		12/2019	New Distribution Stations	Addition of new New Two Mile Creek Rd 115-13.2 kV substation	Under Construction	N/R	formerly known as Tonawanda 115-13.2kV
Reliability	National Grid, USA		12/2019		Huntley-Lockport 36/37 Asset Condition Refurbishment	Planned	Proposed	
Reliability	National Grid, USA		06/2020	Huntley Substation Rebuild	Rebuild of Huntley Substation	Under Construction	N/R	
Reliability	National Grid, USA		11/2020	Gardenville Substation	Replace Gardenville 230:115 kV transformer TR#4	Planned	Approved	
Reliability	National Grid, USA		11/2020	Gardenville Substation	Complete rebuild of Gardenville 115 kV station	Under Construction	Approved	
Public Policy	National Grid, USA		06/2021	Western NY Reinforcement Project	Niagara-Packard #193&194 Reconductor	Concept	N/R	
Reliability	National Grid, USA		04/2022	Western NY Reinforcement Project	Niagara-Packard #191 Reconductor 3.7 miles	Concept	Uncertain	Separated 191 &192



# 2018 LTP – Western NY (Frontier 2 of 2)



Primary Driver	Primary Equipment Owner	Other Equipment Owner(s)	Projected In-Service Month/Year	Major Project	Project	Updated Status	NYISO System Impact Study Status	Comments
<b>Western New York - Frontier</b>								
Reliability	National Grid, USA		04/2022	Western NY Reinforcement Project	Niagara-Packard #192 Reconductor 3.7 miles	Concept	Uncertain	Separated 191 & 192
Reliability	National Grid, USA		06/2022	Western NY Reinforcement Project	Packard-Gardenville 115kV Line 182 Reactor	Concept	Uncertain	
Reliability	National Grid, USA		06/2022	Transformer Replacements	Replace TR2 at Elm Street	Proposed	N/R	
Reliability	National Grid, USA		06/2022	Transformer Replacements	Seneca Terminal Station - Replace TR2 & TR5	Concept	N/R	
Reliability	National Grid, USA		06/2022	Transformer Replacements	Gardenville TR3 Replacement	Concept	Uncertain	
Reliability	National Grid, USA		01/2023	Western NY Reinforcement Project	Packard-Erie #181-922 Reconductor 16.9 miles	Concept	Uncertain	Article VII required
Reliability	National Grid, USA		01/2023	Western NY Reinforcement Project	Niagara-Gardenville #180 - Reconductor	Concept	Uncertain	
Reliability	National Grid, USA		03/2023	Western NY Reinforcement Project	Walck-Huntley #133, Packard-Huntley #130 Reconductor	Concept	Uncertain	Packard-Huntley in Gold Book
Reliability	National Grid, USA		06/2023	Transformer Replacements	Kensington Terminal Station - Replace TR4 & TR5	Concept	N/R	
Reliability	National Grid, USA		06/2023	New Distribution Stations	Install new 115-13.2kV substation in Niagara Falls (Royal Ave)	Concept	N/R	



# Western NY - Genesee

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# 2018 LTP – Western NY (Genesee)



Primary Driver	Primary Equipment Owner	Other Equipment Owner(s)	Projected In-Service Month/Year	Major Project	Project	Updated Status	NYISO System Impact Study Status	Comments
<b>Western New York - Genesee</b>								
Reliability	National Grid, USA		08/2018	Genesee 115kV Capacitor Banks	Install 115kV 20 MVar cap bank at Golah substation	Planned	N/R	
Reliability	National Grid, USA		11/2018	Genesee 115kV Capacitor Banks	Install 30 MVAR 115 kV Capacitor Bank at Batavia	Planned	N/R	Second
Reliability	National Grid, USA		05/2019	Mortimer	Add second 115 kV breaker in series with the existing bus tie breaker at Mortimer	Planned	N/R	
Reliability	National Grid, USA		01/2020	Mortimer	Swap 115 kV lines #113 and #114 at Mortimer Station	Planned	N/R	Corrected Line Numbers
Reliability	National Grid, USA		02/2020	Mortimer	Replace 115-66kV TR3	Planned	N/R	
Reliability	National Grid, USA		03/3021		Rebuild 115kV portion of Golah Substation	Concept	N/R	





# 2018 LTP – Western NY (Southwest)



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Primary Driver	Primary Equipment Owner	Other Equipment Owner(s)	Projected In-Service Month/Year	Major Project	Project	Updated Status	NYISO System Impact Study Status	Comments
<b>Western New York - Southwest</b>								
Reliability	National Grid, USA		08/2019	New Subtransmission Supply Stations	Install new 115-34.5kV substation at West Ashville	Planned	N/R	Article VII Filed
Reliability	National Grid, USA		02/2022	Western NY Reinforcement Project	Add a second 115 kV bus tie in series with existing Dunkirk 115 kV bus tie breaker	Planned	Approved	Delayed from 6/2018
Reliability	National Grid, USA		02/2022		Dunkirk 115 kV Rebuild	Planned	N/R	
Reliability	National Grid, USA		06/2021	Western NY Reinforcement Project	Install Reactors on Falconer - Warren 115 kV circuit #171 (795 ACSR)	Concept	Approved	Cancelled
Reliability	National Grid, USA		06/2023	Gardenville-Dunkirk	Reconductor 20.5 Miles of the 115 kV #141 & # 142 circuits between Gardenville and North Angloa	Concept	N/R	



# Central NY – SOC (Syracuse/Oswego/Cortland)

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# 2018 LTP – Central NY (Syracuse/Oswego/Cortland)

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Primary Driver	Primary Equipment Owner	Other Equipment Owner(s)	Projected In-Service Month/Year	Major Project	Project	Updated Status	NYISO System Impact Study Status	Comments
<b>Central New York - Syracuse/Cortland/Oswego</b>								
Load Growth	National Grid, USA		01/2019		Install new Distribution substation in De Witt area	Planned	N/R	
Reliability	National Grid, USA		06/2019		Dewitt-Pebble Hill #19 Re-conductor 1/2 mile line	Cancelled	N/R	
Reliability	National Grid, USA		05/2020	Central Division Reconductoring	GE - Geres Lock #8 115 kV Reconductor	Planned	N/R	
Reliability	National Grid, USA		06/2020		South Oswego-Indeck #6 - High Speed Reclosing	Concept	Uncertain	
Reliability	National Grid, USA		10/2020	Central Division Reconductoring	Reconductor 115 kV Clay - Dewitt #3	Planned	N/R	Article VII Proceedings
Reliability	National Grid, USA		10/2020	Central Division Reconductoring	Reconductor 115 kV Clay - Teall #10	Planned	N/R	Article VII Proceedings
Reliability	National Grid, USA		11/2020		Oswego 115kV Station Rebuild	Planned	N/R	
Reliability	National Grid, USA		12/2021		Elbridge -Woodard #4 Line Install Reactors	Concept	Uncertain	
Reliability	National Grid, USA		12/2021		Elbridge 115kV Reactors	Concept	Uncertain	
Reliability	National Grid, USA		08/2022		Cortland - Clarks Corners #1-716 Reconductor 0.3 miles of 115 kV	Concept	N/R	
Reliability	National Grid, USA		12/2022		Lighthouse Hill Station Relocation	Concept	N/R	

# Central NY – Utica/Rome



# 2018 LTP – Central NY (Utica/Rome)



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Primary Driver	Primary Equipment Owner	Other Equipment Owner(s)	Projected In-Service Month/Year	Major Project	Project	Updated Status	NYISO System Impact Study Status	Comments
<b>Central New York - Utica / Rome</b>								
Reliability	National Grid, USA		10/2016	Edic 345-230kV TB2 Reconnect	Create a new bay by adding two new 345 kV breakers, then reconnect the TB2 to the newly created position.	In-Service	Approved	
Load Growth	National Grid, USA		01/2018		Edic-Marcy Nanocenter	In-Service	N/R	
Load Growth	National Grid, USA		01/2018		Edic Add 345/115kV Transformers and 115kV Circuits to MV Edge	In -Service	N/R	
Reliability	National Grid, USA		04/2018		Install Reactors on Yahundasis-Porter #3	Under Construction	N/R	
Reliability	National Grid, USA		04/2018		Install Reactors on Onedia -Porter #7	Under Construction	N/R	
Reliability	National Grid, USA		06/2022	Porter Station Bulk Power Upgrades	Porter 230 kV substation bulk power upgrades	Planned	N/R	
Reliability	National Grid, USA		12/2022		Terminal Substation (Utica) Relocation	Concept	N/R	
Reliability	National Grid, USA		12/2023		Onieda Station Rebuild	Concept	N/R	
Reliability	National Grid, USA		12/2023		Booneville Station Rebuild	Concept	N/R	



# Central NY – Northern

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# 2018 LTP – Central NY (Northern)



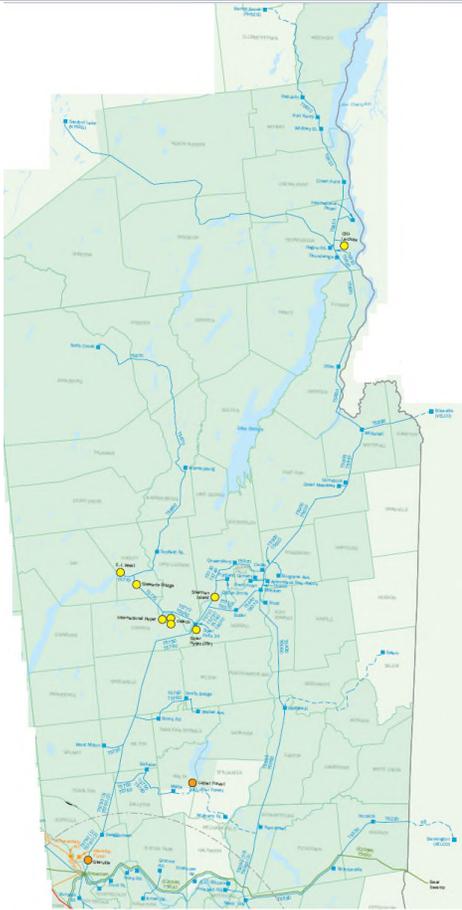
Primary Driver	Primary Equipment Owner	Other Equipment Owner(s)	Projected In-Service Month/Year	Major Project	Project	Updated Status	NYISO System Impact Study Status	Comments
<b>Central New York - Northern</b>								
Reliability	National Grid, USA		06/2020		Taylorville Terminal Equipment Upgrades	Proposed	N/R	
Reliability	National Grid, USA		06/2020		Taylorville - Boonville Clearance Upgrades	Proposed	N/R	
Reliability	National Grid, USA		06/2020		Browns Falls Terminal Equipment Upgrades	Proposed	N/R	
Reliability	National Grid, USA		06/2020		Browns Falls - Taylorville Clearance Upgrades	Proposed	N/R	
Reliability	National Grid, USA		06/2020		Colton - Browns Falls Clearance Upgrades	Proposed	N/R	
Load Growth	National Grid, USA		02/2022	Watertown Substation	Install new distribution substation in Watertown area	Planned	N/R	
Reliability	National Grid, USA		12/2022		Malone Distribution Substation Expansion	Concept	N/R	
Reliability	National Grid, USA		12/2024		Reconductor 8 miles of Thousand Island-Coffeen	Concept	Uncertain	
Reliability	National Grid, USA		12/2024		Coffeen Terminal Equipment Upgrades	Concept	Uncertain	
Reliability	National Grid, USA		12/2025		New 115kV Line - Lyme Junction to Indian River	Concept	Uncertain	



# Eastern NY – Northeast area

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# 2018 LTP List – Eastern NY (Northeast)

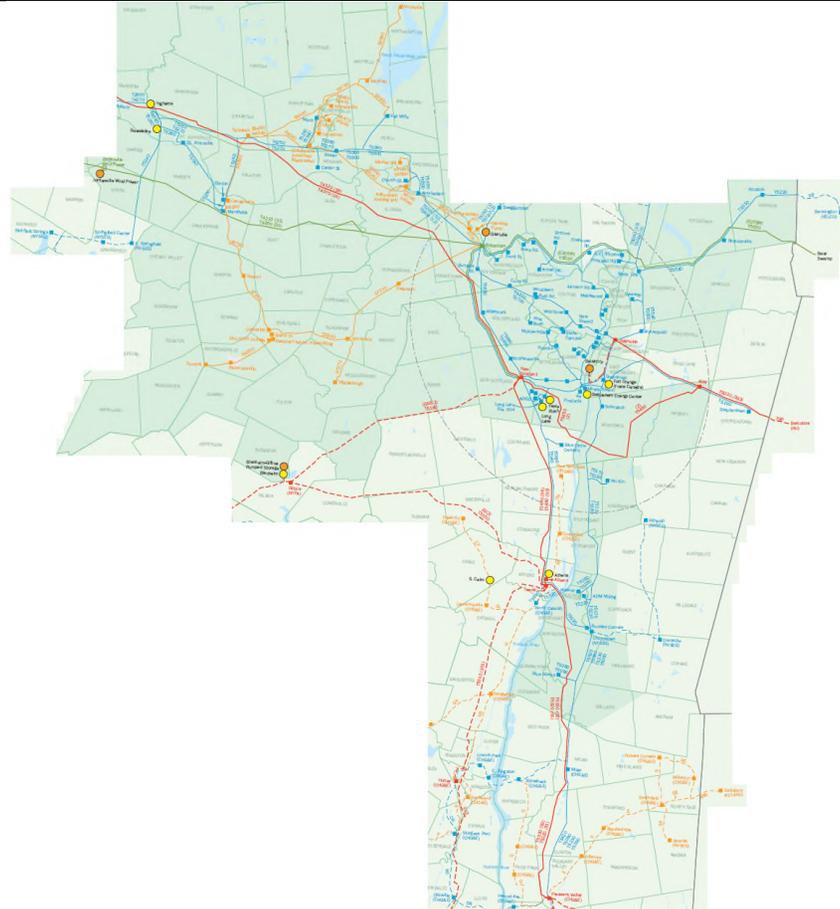


Primary Driver	Primary Equipment Owner	Other Equipment Owner(s)	Projected In-Service Month/Year	Major Project	Project	Updated Status	NYISO System Impact Study Status	Comments
<b>Eastern New York - Northeast</b>								
Reliability	National Grid, USA		03/2017		Reconductor Mohican-Luther Forest #3 115 kV (14.2 miles)	In Service	Approved	
Reliability	National Grid, USA		06/2017		Reconductor Mohican-Battenkill #15 115 kV (14.2 miles)	In Service	Approved	
Reliability	National Grid, USA		05/2018		Add second 230-115kV transformer at Eastover Road	Under Construction	Approved	
Reliability	National Grid, USA		12/2018		Add a two-stage 115 kV 20MVAR Capacitor at Ticonderoga	Planned	N/R	
Reliability	National Grid, USA		01/2019		Replace 115kV Breakers at North Troy	Under Construction	N/R	
Reliability	National Grid, USA		03/2019		New 115 kV switching Station - Lasher Rd	Under Construction	N/R	Article VII Approved
Reliability	National Grid, USA		06/2019		Mohican-Butler Reconductor 3.5 miles	CANCELLED	N/R	Non-Firm in 2018 Gold Book
Reliability	National Grid, USA		11/2019	New Distribution substations	Build a 115-13.2 kV substation @ Sodeman Road	Under Construction	N/R	
Reliability	National Grid, USA		01/2020		New 115 kV switching Station - Schaghticoke	Planned	N/R	
Load Growth	National Grid, USA		03/2020	New Distribution substations	New Lasher (Randall) Rd 115-13.2kV substation outside Ballston, NY	Under Construction	N/R	Article VII Approved



# Eastern NY - Capital & Hudson Valley

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# 2018 LTP – Eastern NY (Capital & Hudson Valley 1 of 2)

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Primary Driver	Primary Equipment Owner	Other Equipment Owner(s)	Projected In-Service Month/Year	Major Project	Project	Updated Status	NYISO System Impact Study Status	Comments
<b>Eastern New York - Capital &amp; Hudson Valley</b>								
Reliability	National Grid, USA		06/2018		Reconfigure Rotterdam Station as part of planned Rebuild to eliminate R1 and R82 breaker-failure contingencies	Under Construction	N/R	
Reliability	National Grid, USA		06/2018		Reconductor/rebuild 3.2 miles of the Wolf Rd-Menands #10 115kV	Under Construction	N/R	
Reliability	National Grid, USA		06/2018		Reconductor/rebuild 3.2 miles of the State Campus-Patroon-Menands #15 115kV	Under Construction	N/R	
Reliability	National Grid, USA		03/2019		Replace 115kV Breakers at Rotterdam	Planned	N/R	
Reliability	National Grid, USA		04/2019	Shunt Capacitor Bank	Install one 35 MVAR 115 kV capacitor bank at Rosa Road	Planned	N/R	
Reliability	National Grid, USA		05/2019		Install Series Reactors at Rotterdam station on the #19 and #17 115 kV lines	Planned	N/R	
Interconnection	National Grid, USA		06/2019		Accommodate NYSEG Falls Park Station on Schodack-Churchtown	Firm	N/R	
Reliability	National Grid, USA		07/2019		Reconductor/rebuild 7.1 miles of the Rotterdam-Curry Rd #11 115kV	Planned	N/R	
Reliability	National Grid, USA		06/2019		Reconductor 115kV Albany-Greenbush 1&2	Planned	N/R	
Load Growth	National Grid, USA		04/2020	New Distribution substations	New Maple Ave 115-13.2kV Substation outside Amsterdam NY	Planned	N/R	

# 2018 LTP – Eastern NY (Capital & Hudson Valley 2 of 2)



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Primary Driver	Primary Equipment Owner	Other Equipment Owner(s)	Projected In-Service Month/Year	Major Project	Project	Updated Status	NYISO System Impact Study Status	Comments
<b>Eastern New York - Capital &amp; Hudson Valley</b>								
Load Growth	National Grid, USA		06/2021	New Distribution substations	New 115-13.2kV substation Bethlehem, NY	Planned	N/R	
Reliability	National Grid, USA		12/2021		Reconductor 115 kV Maplewood-Menands #19 & Maplewood-Reynolds #31 Lines	Concept	N/R	
Reliability	National Grid, USA		12/2023	Inghams Substation Rebuild	Replace 115 kV breakers; adding a new phase shifter	Concept	Uncertain	
Reliability	National Grid, USA		05/2024		Rotterdam 115kV Rebuild	Concept	N/R	
Reliability	National Grid, USA		12/2024		Reconductor 115kV Inghams-St Johnsville	Concept	Uncertain	
Reliability	National Grid, USA		12/2024		Marshville Terminal Equipment Upgrades	Concept	Uncertain	
Reliability	National Grid, USA		12/2024		Reconductor 0.3mi 115kV St Johnsville - Marshville	Concept	Uncertain	
Reliability	National Grid, USA		12/2024		Reconductor 0.2 mi 115kV Ingham - Stoner	Concept	Uncertain	
Reliability	National Grid, USA		12/2024		Reconductor 0.3 mi Clinton Tap 15	Concept	Uncertain	
Reliability	National Grid, USA		12/2025		Reconductor 115kV Meco-Rotterdam & Stoner-Rotterdam	Concept	Uncertain	

