

National Grid 2021 Local Transmission Plan

Mark F Domino, PE
November 19, 2021

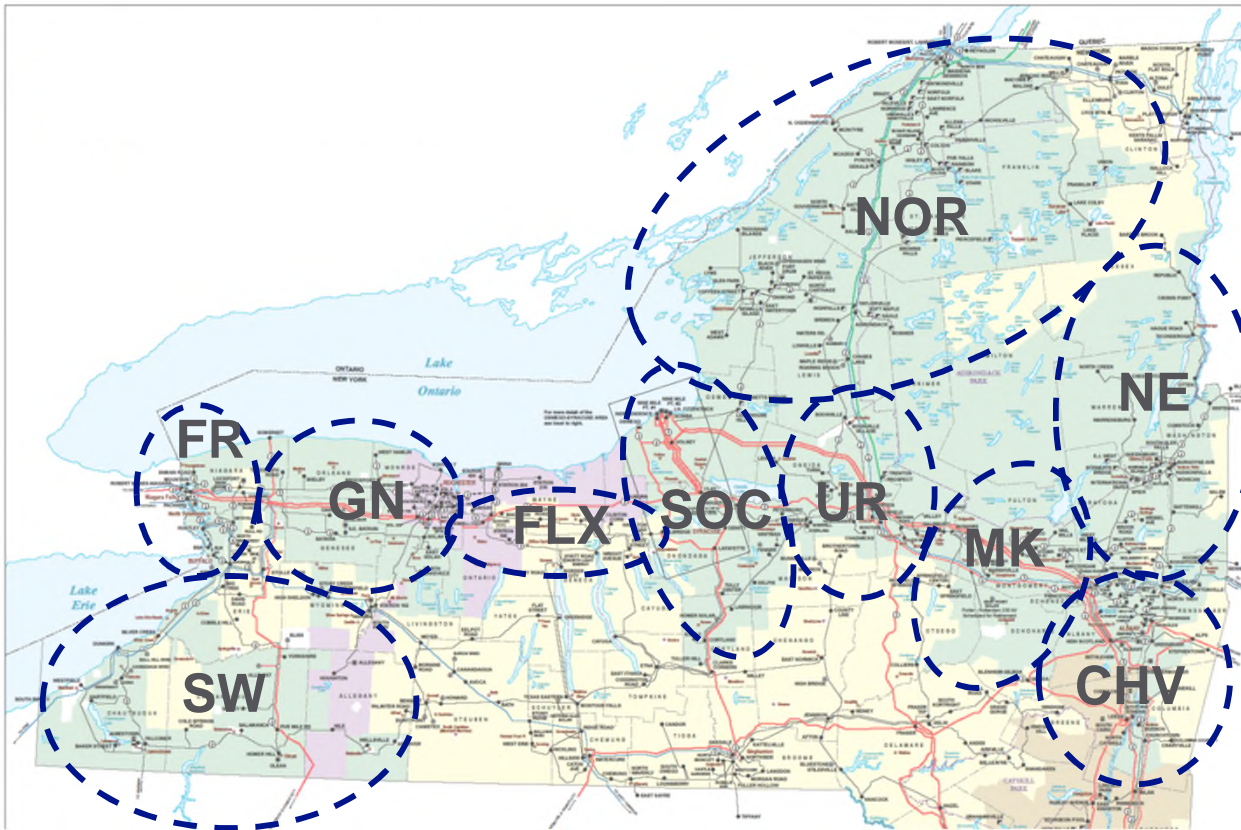
nationalgrid



National Grid Statistics - NY

# Customers	1,671,024
LSE Square Miles	25,013
Transmission Ckt Miles	6,050
Tx 69 & 115kV Ckt Miles	4,785
# Tx Substations	192
# Dx Substations	397
# Power of Transformers	1,184
# Circuit of Breakers	4,778
NYISO Zones	A - F

National Grid Planning Areas



Base Map from NYISO

- **FR** - Frontier
- **SW** - Southwest
- **GN** - Genesee
- **FLX** - Finger Lakes
- **SOC** -
Syracuse/Oswego/Cortland
- **NOR** - Northern
- **UR** - Utica/Rome
- **MK** - Mohawk
- **NE** - Northeast
- **CHV** - Capital/Hudson Valley

Frontier



- Buffalo-Gardenville-Niagara Falls-Lockport
- (Erie & Niagara Counties)

Base Map from NYISO

Frontier (1 of 3)

Project Name	Description	Status	NYISO Interconnection Status	Article VII Status	Expected In-Service Date
Royal Ave (New Harper) Station replacement	Replace 115-12kV substation with a 115-13.2kV substation	Under Construction	Not Applicable	Not Applicable	12/2021
Niagara-Packard 192 Reconductor	115kV, ~3.7 miles (entire line)	Under Construction	Not Applicable	Not Applicable	11/2021
Niagara-Packard 191 Reconductor	115kV, ~3.7 miles (entire line)	Under Construction	Not Applicable	Not Applicable	02/2022
Niagara-Packard 193/194 Reconductor	115kV, ~3.7miles (entire double circuit line)	Planned	Not Applicable	Not Applicable	07/2022
Packard-Huntley 130/ Walck-Huntley 133 Reconductoring	115kV, ~9 miles of double circuit reconductoring (Sta 78 to Huntley)	Planned	Not Applicable	Not Applicable	06/2024

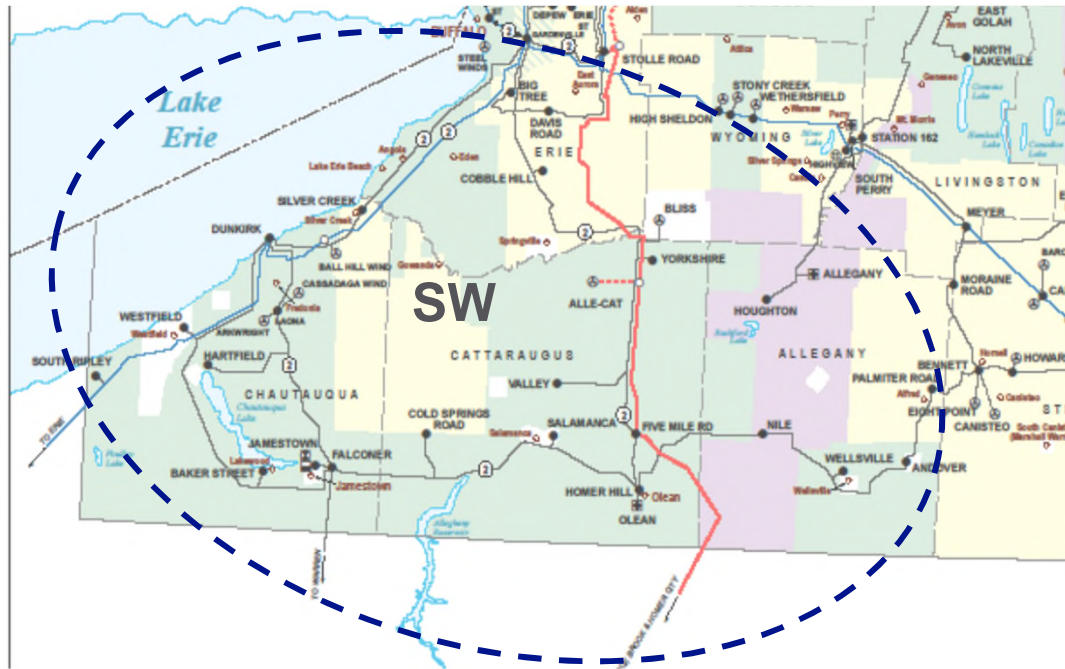
Frontier (2 of 3)

Project Name	Description	Status	NYISO Interconnection Status	Article VII Status	Expected In-Service Date
Packard-Gardenville Reconfiguration 115kV Lines 180, 182, 181-922	Install additional breakers at Gardenville, reactors at Packard, bussing of existing 181, build Line 922 to Gardenville, Niagara-Gardenville 'expressway' 180 on old 181/25cycle alignment	Planned		Not Applicable	01/2026
Huntley-Lockport 36/37 Resiliency	Add beakers on Huntley side of Getzville, move Ayer Rd Taps	Concept		Not Applicable	12/2026
Lockport Station Rebuild	Rebuild 115kV station	Planned	Not Applicable	Not Applicable	12/2027

Frontier (3 of 3)

Project Name	Description	Status	NYISO Interconnection Status	Article VII Status	Expected In-Service Date
Seneca TR5 Replacement	115-23kV transformer replacement	Under Construction	Not Applicable	Not Applicable	10/2022
Kensington TR4 & 5 Replacement	115-23kV transformers at Kensington	Planned	Not Applicable	Not Applicable	01/2023
Elm St TR2 Replacement	240-24kV transformer replacement	Planned	Not Applicable	Not Applicable	3/2025

Southwest



- South of Buffalo/Gardenville, Dunkirk, Olean
- Southern Erie, Chautauqua, Cattaraugus, Allegany Counties

Base Map from NYISO

Southwest (1 of 2)

Project Name	Description	Status	NYISO Interconnection Status	Article VII Status	Expected In-Service Date
Big Tree Interconnect Line 151	115kV, Big Tree Substation - AVANGRID Station Expansion	Planned	Not Applicable	Not Applicable	08/2022
Dunkirk Station Rebuild	Rebuild Dunkirk Transmission Station/Asset Separation	Under Construction	Not Required	Not Required	08/2022
Gardenville-Dunkirk 141/142 Rebuild	115kV Rebuild Gardenville to North Angola (~20 miles)	Planned		Applied for	05/2026
Laona-Falconer Series Reactors	Relocate Reactors New Rd to Moons Rd	CANCELLED	Not Required	Not Applicable	Not Applicable
Homer Hill Station Asset replacement	115kV & 34.kV equipment replacement	Planned	Not Required	Not Applicable	10/2026
New Industrial Customer 115kV (Chautauqua)	115kV Taps to Customer Station	Planned	Not Required	Not Applicable	12/2022
New Industrial Customer 115kV (Erie)	115kV Taps to Customer Station	Planned	Not Required	Part of Larger job GD141/142	12/2023

Southwest (2 of 2)

Project Name	Description	Status	NYISO Interconnection Status	Article VII Status	Expected In-Service Date
Andover Station Line 157 Upgrades	115kV Terminal Equipment at Andover (CLCPA)	Concept		Not Applicable	11/2022
Nile Hill Upgrades on line 157	Upgrade terminal equipment at Nile Hill Switch Structure (CLCPA)	Concept		Unknown	11/2022
Laona-Moons-Falconer Dynamic Line Ratings	Add monitoring Equipment to implement DLR (CLCPA)	Concept		Not Applicable	10/2023
Dunkirk-Laona 161/162 Reconductor	115kV Reconductor approximately 5 miles (CLCPA)	Concept		Not Applicable	06/2026
Gardenville Dunkirk 141/142 (South)	115kV Rebuild North Angola to Dunkirk (~20 miles)	Concept		Required	10/2029

Genesee



Base Map from NYISO

- Lockport, Batavia, Avon, Mortimer
- Eastern Niagara, Orleans, Genesee, Wyoming, Livingston, Monroe, Ontario Counties

Genesee (1 of 2)

Project Name	Description	Status	NYISO Interconnection Status	Article VII Status	Expected In-Service Date
Mortimer Substation Upgrade	Relay upgrades for AVANGRID replace 115-69kV transformer and new 115kV bus tie breaker	Under Construction		Not Required	03/2022
Rochester Airport Cables 111,113,114	Replace 115kV cables	Planned/UC	Not Required	Not Required	01/2023
New Industrial Customer 115kV (Genesee)	115kV Transmission Service to New Customer	Planned	Complete	Not Required	03/2023
Mortimer-Golah 109 - Rebuild to 115kV	Rebuild under 10 miles of 69kV to 115kV	Concept		Not Required	12/2025
Lockport - Batavia 112 Rebuild	Reconductor/Rebuild 115kV from Lockport to Oakfield (~22ckt miles)	Planned	Not Required	Applied For	04/2026
Rebuild Mortimer-Golah 110	115kV, Rebuild approximately 10 miles	Concept		Not Required	09/2027

Genesee (2 of 2)

Project Name	Description	Status	NYISO Interconnection Status	Article VII Status	Expected In-Service Date
North Leroy 115kV Terminal Upgrade	115kV, North LeRoy (CLCPA)	Concept		Not Required	08/2023
Mumford 115kV Terminal Upgrade	115kV Terminal Equipment at Mumford (CLCPA)	Concept	Not Required	Not Required	04/2024
Golah Sub Rebuild	115kV; Rebuild Golah Transmission Substation (CLCPA)	Planned	Not Required	Not Required	05/2025
Lockport Smart Valves	Install Smart Valves on Lines 111, 113, 114 at Lockport (CLCPA)	Concept		UNK	07/2025
Southeast Batavia-Golah 119 Rebuild	115kV, Rebuild approximately 8 miles from Southeast Batavia (CLCPA)	Concept		Not Required	10/2028

Finger Lakes



Base Map from NYISO

- Mortimer – Elbridge National Grid Transmission
- AVANGRID & Municipal Distribution Loads
- Monroe, Wayne, Ontario, Seneca, Cayuga, Onondaga counties

Finger Lakes

Project Name	Description	Status	NYISO Interconnection Status	Article VII Status	Expected In-Service Date
Farmington 168 Interconnection	115kV Interconnect Mortimer-Elbridge 2 and Pannell-Geneva 4/4A to AVANGRID Station 168 (Farmington)	Planned	NR	Not Applicable	11/2023
Hook Rd 127 Interconnection	115kV Interconnect Mortimer-Elbridge 2 to AVANGRID Station 127 (Hook Rd)	Planned	NR	Not Applicable	11/2023
Pittsford Sta 056 Interconnection	115kV Interconnect Mortimer-Pannell 24 to AVANGRID Station 056 (Pittsford)	Planned	NR	Not Applicable	10/2024
Mortimer-Pannell 24/25 Rebuild	115kV, Rebuild Mortimer-Pannell 24/25 ~15.7miles	Planned	UNK	Not yet Applied for	05/2028

Syracuse/Oswego/Cortland



- Elbridge – Oswego – Oneida - Cortland
- Oswego, Onondaga, Cortland, Madison Counties

Base Map from NYISO

SOC (Page 1 of 3)

Project Name	Description	Status	NYISO Interconnection Status	Article VII Status	Expected In-Service Date
Oswego Station Rebuild	Replace various 115kV and 34.5kV assets.	Construction Complete		Not Applicable	09/2021
Oswego Station 345kV Asset Separation	Remove NG assets in the generation plant and put in new Control House. Also replace deteriorated equipment.	Planned		Not Applicable	New CH 2/2022, Rest of project 04/2025
Volney-Clay 6 Terminal Equipment	Upgrade 345kV Terminal Equipment at Clay	Planned		Not Applicable	6/2022
Clay-Woodward 17 Reactor	Install 115kV series reactor at Woodard	Planned		Not Applicable	12/2023
Reconductor Cortland-Clarks Corners	Reconductor approximately 5 spans	Planned		Not Applicable	03/2024
Tar Hill Station	115kV, new Breaker-and-a-Half substation to replace Lighthouse Hill	Planned		UNK	11/2026
S Oswego - Lighthouse Hill ACR/CCR	Upgrade several spans to remove clearance limit and standard refurbishment	Concept		Not Applicable	03/2027

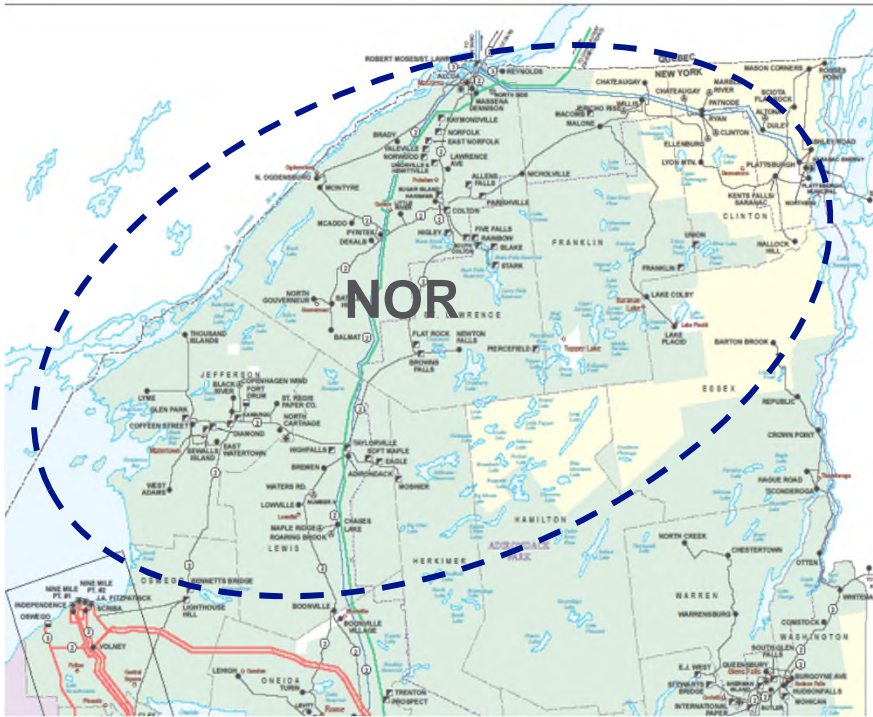
SOC (2 of 3)

Project Name	Description	Status	NYISO Interconnection Status	Article VII Status	Expected In-Service Date
Clay - Wetzel Resiliency	Add a breaker at Clay and build approximately 2000 feet of 115kV to create radial line to Wetzel Rd from LHH-Clay Tap 7	Planned		Not Applicable	12/2023
Duguid (Clay-DeWitt) Resiliency	Replace existing switch X5-1 and include remote control capability on Clay-DeWitt 5	Concept		Not Applicable	12/2026
S Oswego - Clay Resiliency	Install Automatic Line Sectionalizing schemes at Whitaker and Gilbert Mills.	Concept		Not Applicable	02/2027
S Oswego - Lighthouse Hill Resiliency	Add Remote Control capability at several existing 115kV switches at/near East Pulaski and Wine creek	Concept		Not Applicable	02/2027
S Oswego - Lighthouse Hill ACR/CCR	Upgrade several spans to remove clearance limit and standard refurbishment	Concept		Not Applicable	03/2027
DeWitt - Tilden Resiliency	Install 115kV breakers at Southwood and Pebble Hill	Concept		Not Applicable	01/2028

SOC (3 of 3)

Project Name	Description	Status	NYISO Interconnection Status	Article VII Status	Expected In-Service Date
DeWitt Station Rebuild	Rebuild 115kV yard, IF AND ONLY IF the station becomes BPS with A10 testing	Concept		-	12/2028
Delphi Terminal Upgrades	Upgrade Terminal Equipment (CLCPA)	Concept		Not Applicable	5/2023
Lighthouse Hill - Clay 7 Clearance	Upgrade spans to remove Clearance Limit (CLCPA)	Concept		Not Applicable	08/2023
Tilden - Cortland Line 18 Clearance	Upgrade spans to remove Clearance limit (CLCPA)	Concept		Not Applicable	11/2023
Tilden Line 18 Terminal Upgrades	Upgrade Terminal Equipment (CLCPA)	Concept		Not Applicable	11/2023
Fenner Line 3,8 Terminal Upgrades	Upgrade Terminal Equipment on Lines 3&8 (CLCPA)	Concept		Not Applicable	08/2024
Cortland Terminal Upgrades	Upgrade Terminal Equipment (CLCPA)	Concept		Not Applicable	11/2024

Northern



Base Map from NYISO

- Malone-Potsdam-Watertown-Croghan
- Jefferson, Lewis, Saint Lawrence, Franklin, Clinton, Essex, Herkimer Counties

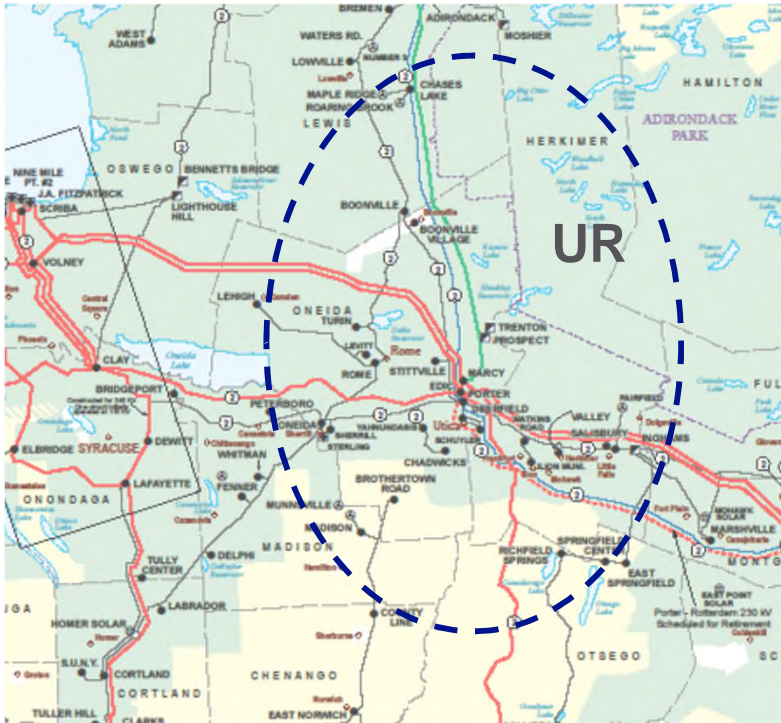
Northern (1 of 2)

Project Name	Description	Status	NYISO Interconnection Status	Article VII Status	Expected In-Service Date
Colton Terminal Equipment	CTs associated with Lines 1 & 2 to Brown Falls And Lines 4 & 5 to Dennison	Planned		Not Applicable	12/2021
Taylorville Term Equipment Upgrade	Replace station connections and CTs	Planned		Not Applicable	05/2022
Flat Rock	115kV, Replace ~200ckt ft of conductor	Planned		Not Applicable	06/2023
Browns Falls Terminal Equipment Upgrade	Replace/Change settings on several CTs on Line 3 & 4	Concept		Not Applicable	10/2023
Coffeen Terminal Equipment	Upgrade Terminal Equipment (CLCPA)	Concept		Not Applicable	10/2023
Malone 115-13.2kV substation expansion	Expand 115-13.2kV substation with a second transformer and feeders	Planned	Not Applicable	Not Applicable	03/2025

Northern (2 of 2)

Project Name	Description	Status	NYISO Interconnection Status	Article VII Status	Expected In-Service Date
Malone PAR	Install PAR on Malone - Wills 1-910	Planned		Not Applicable	07/2025
Coffeen	Replace Assets at Coffeen, and install cap bank	Concept		Not Applicable	04/2026
Taylorville Asset Sep	Build new SubT facilites to separate assets from the hydroplant	Concept	Not Applicable	Not Applicable	04/2026
Browns Falls - Asset Sep	Build new SubT facilites to separate assets from the hydroplant	Planned	Not Applicable	Not Applicable	05/2026
Indian River - Lyme Jct New Transmission Line	Approximately 8.6mi of new 115kV transmission line, New Station at Lyme Jct station and Indian River substation expansion	Concept		Not Applicable	12/2026

Utica/Rome



Base Map from NYISO

- Utica – Rome – Little Falls
- Oneida, Madison, Lewis, Herkimer Counties

Utica/Rome

Project Name	Description	Status	NYISO Interconnection Status	Article VII Status	Expected In-Service Date
Terminal Station Rebuild	Rebuild 115/13.2kV substation	Planned	Not Applicable	Not Applicable	02/2025
Oneida Station Rebuild	115kV Station Rebuild and add 115kV Capacitor Bank	Planned	Not Applicable	Not Applicable	11/2026
Teall-Oneida Resiliency	Reconfigure supplies to Bridgeport and Petersboro	Concept	Not Applicable	Not Applicable	12/2026
Yahundasis - Porter Resiliency	Add Motor-Operated Disconnect to the 115kV Line	Concept	Not Applicable	Not Applicable	01/2027
Boonville Station Rebuild	New 115kV station adjacent to existing	Planned	Not Applicable	Not Applicable	10/2027

Mohawk



- Gloversville, Amsterdam, Cobleskill
- Fulton, Montgomery, Schoharie, Otsego, Schenectady Counties

Base Map from NYISO

Mohawk (1 of 2)

Project Name	Description	Status	NYISO Interconnection Status	Article VII Status	Expected In-Service Date
Amsterdam - Rotterdam 3/4 Relocation	Rebuild approximately 1 mile of 69kV	Planned	Not Applicable	Not Applicable	07/2023
Schoharie-Schenectady International-Rotterdam 18/4 Rebuild	Rebuild approximately 1 mile of Lines 18/4 outside Rotterdam	Planned		Not Applicable	09/2024
Rotterdam 115-69kV - Rebuild	Add a second 115-69kV transformer at Rotterdam	Planned		Not Applicable	02/2026
Inghams Station Rebuild	Rebuild Inghams sub in a new location including the PAR	Planned	Not Applicable	UNK	08/2026
Gloversville - Marshville 6 Rebuild	Rebuild approximately 20 miles of 69kV	Concept		Not Applicable	12/2030

Mohawk (2 of 2)

Project Name	Description	Status	NYISO Interconnection Status	Article VII Status	Expected In-Service Date
Stoner Station upgrades	Upgrade limiting equipment at Stoner	Planned		Not Applicable	03/2023
Clinton Station upgrades	Upgrade limiting equipment at Clinton	Planned		Not Applicable	05/2023
Rotterdam 10/12 Terminal Upgrades	Upgrade terminal equipment on Lines 10 & 12 at Rotterdam	Planned		Not Applicable	07/2023
Marshville 115kV Rebuild	Replace transformers at Marshville and upgrade associate equipment	Planned		Not Applicable	05/2024
MECO 115kV Rebuild	Rebuild substation with two 115kV transformers	Planned		Not Anticipated	07/2025
Inghams-Rotterdam Rebuild	Rebuild the 115kV corridor from Inghams to Mecos to Stoner to Maple Ave to Church St to Rotterdam (~50 miles of double circuit) (CLCPA)	Concept		Likely required	09/2029
Inghams-Marshville	Rebuild Inghams - Marshville (~17 miles) CLCPA	Concept		Required	09/2029

Northeast



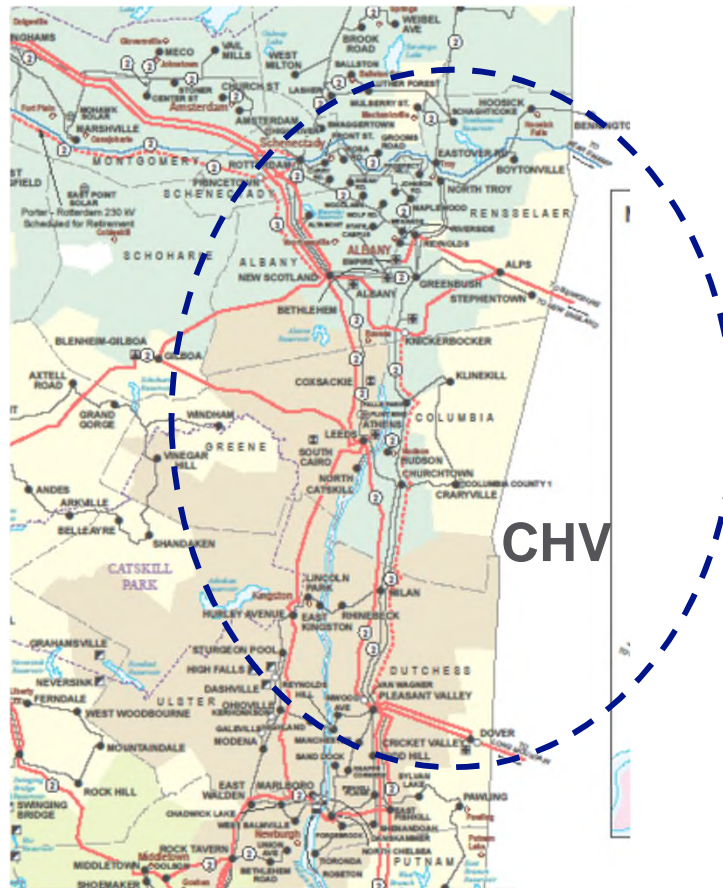
- Ticonderoga, Glens Falls, Saratoga
- Essex, Warren, Washington, Saratoga Counties

Base Map from NYISO

Northeast

Project Name	Description	Status	NYISO Interconnection Status	Article VII Status	Expected In-Service Date
Mohican Station Rebuild	Replace certain 115kV and 34.5kV assets, add 115-13.2kV substation	Planned		N/A	09/2025
Schaightcoke-Eastover Reconductor	Rebuild approximately 7 miles of double circuit Schaightcoke - Eastover	Concept		Not Applicable	UNK

Capital & Hudson Valley



- Albany-Schenectady-Troy, Hudson
- Albany, Schenectady, Rensselaer, Greene, Columbia, Dutchess Counties

Base Map from NYISO

CHV

Project Name	Description	Status	NYISO Interconnection Status	Article VII Status	Expected In-Service Date
LaFarge Relocation	Relocate 115kV D/Ckt on LaFarge Property	Planned	Not Required	Not Required	12/2022
Albany Steam Asset Replacement	Replace NG 115kV Assets at Albany Steam substation	Under Construction	Not Required	Not Required	12/2022
Wolf Rd-Menands #10 Reconductoring	~1.36 mi of reconductoring	Planned	Q556 UF	Not Required	04/2022
Maplewood-Menands 19/31	~3 mi of reconductoring	Planned	Not Required	Not Required	03/2024
Blue Stores "Tap" Rebuild	Rebuild 2 miles of 115kV from main corridor to substation (CLCPA)	Concept		Not Required	1/2025
Forbes Substation	New 115-13.2kV substation in Rensselaer	Planned	Not Required	Not Required	04/2025
New Krumkill Resiliency	Add automatic line sectionalizing scheme	Concept	Not Required	Not Required	01/2027
Greenbush 115 & 34.5kV Refurbishment	Replace substation equipment	Concept	Not Required	Not Required	03/2027
St. Campus-Menands #15 UG Cable Replacement	Replace 0.4 mile of UG cable.	Concept		Not Required	02/2029

National Grid LTP

Interested parties may submit written comments on National Grid's LTP within 30 days (Dec 18, 2021) to:

Mark Domino PE, Engineering Manager

Transmission Planning - NY

National Grid

300 Erie Blvd, West

Syracuse, NY 13202

- TransmissionPlanning@nationalgrid.com

This LTP will be posted on the National Grid OASIS website:

<https://www9.nationalgridus.com/oasis/>

TGP-28 – Transmission Planning Guide - may be found at:

https://www9.nationalgridus.com/oasis/non_html/TGP28%20Issue%205%20Jan%2027%202020.pdf

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