

People. Power. Possibilities.

Central Hudson
Gas & Electric Corporation



Local Transmission Plan

Presented

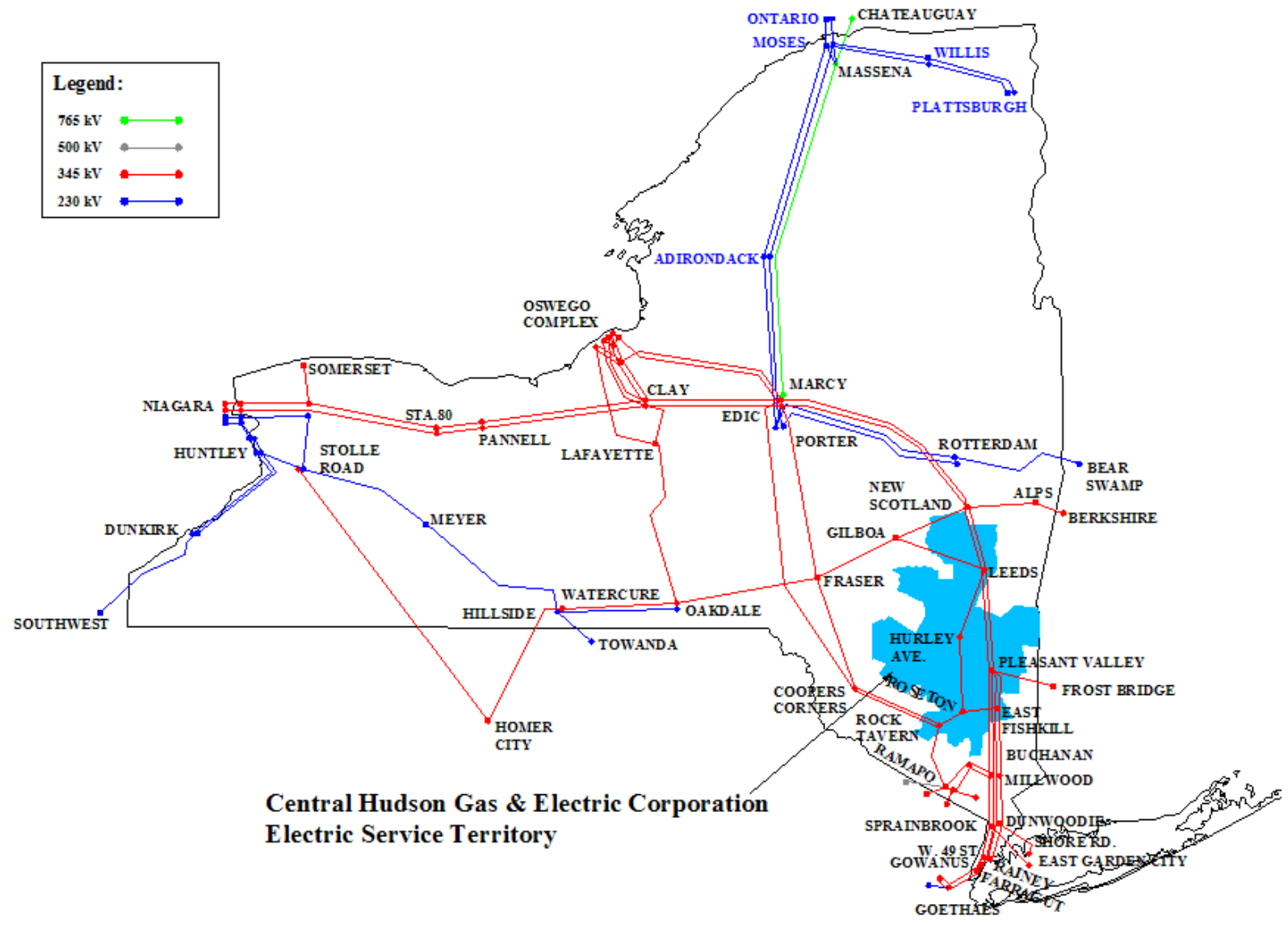
October 4, 2011

NYISO Offices – Krey Boulevard

Revised February 13, 2012

Revised October 15, 2012

Central Hudson System



Central Hudson's System

- Zone G: Majority of Central Hudson's load
- Zone E: One small distribution substation
- Interconnections with Consolidated Edison, Orange & Rockland, NYSE&G, National Grid, Northeast Utilities, First Energy, NYPA
- Own & Operate approximately 622 miles of 69 kV, 115 kV & 345 kV transmission lines; three 345 kV stations.

Historic Peak Load

Summer Peak Loads				Winter Peak Loads			
Year	NYCA	Zone G	CHG&E+	Year	NYCA	Zone G	CHG&E+
2004	28433	2041	1051	2004-05	25541	1766	988
2005	32075	2236	1204	2005-06	24947	1663	960
2006	33939	2436	1295	2006-07	25057	1638	934
2007	32169	2316	1185	2007-08	25021	1727	960
2008	32432	2277	1187	2008-09	24673	1634	911
2009	30844	2159	1107	2009-10	24074	1527	909
2010	33452	2399	1229	2010-11	24652	1586	905
2011	33865	2415	1225	2011-12			861
2012			1168				

+ CHG&E Loads not coincident with other NYCA loads

Forecast Peak Load

Summer Peak Loads				Winter Peak Loads			
Year	NYCA*	Zone G*	CHG&E+	Year	NYCA*	Zone G*	CHG&E
2011				2011-12	24533	1660	No Winter forecast
2012	33182	2290	1197	2012-13	24693	1676	
2013	33433	2321	1203	2013-14	24761	1686	
2014	33609	2345	1209	2014-15	24810	1699	
2015	33678	2357	1216	2015-16	24828	1709	
2016	33749	2366	1210	2016-17	24908	1722	
2017	33916	2375	1221	2017-18	25014	1734	
2018	34190	2387	1233	2018-19	25232	1747	
2019	34533	2408	1247	2019-20	25500	1769	
2020	34867	2428	1259	2020-21	25909	1794	
2021	35192	2449	1271	2021-22	26210	1824	

* From 2011 “Gold Book” Table I-2a

+ CHG&E Forecast (includes impact of energy efficiency)

Transmission Facilities Covered by Central Hudson's Local Transmission Plan

- Central Hudson's Local Transmission Plan is intended to provide safe & reliable service to the load within our franchise area.
- This plan does not address state-wide issues such as intra-state and inter-state transfer limits.
- This plan does not address in-kind equipment replacements

Transmission Facilities Covered by Central Hudson's Local Transmission Plan

- Transmission lines: 69 kV and 115 kV
- Transmission system transformers:
 - 345/115 kV
 - 115/69 kV
- Substation facilities (69 kV, 115 kV, 345 kV)

Planning Horizon

- 10 Years
 - Annual planning process
 - 5-year corporate capital forecast
 - generally “firm” projects
 - Additional 5 years
 - generally “potential” projects

Data & Models

- Load Flow cases produced by NYISO Staff
 - NYISO Staff solicits input from all Transmission Owners
- Individual historic substation loads coincident with Central Hudson's peak hour
- Facility inspection reports, condition assessments, diagnostic test data
- Compliance requirements

Issues Addressed

- Central Hudson's System Load Serving Capability
 - Including various levels of generation
 - Consideration of through-flows
 - Consideration of proposed interconnections
- Central Hudson Local Areas' Load Serving Capabilities
 - Northwest 69 kV
 - Southwest 69 kV
 - Southern Dutchess 115 kV
 - Mid-Dutchess 115 kV
 - Ellenville Area
 - Newburgh Area
 - Eastern Dutchess 69 kV
 - Kingston – Rhinebeck
- Central Hudson Transmission System Infrastructure facility inspection reports, condition assessments, & diagnostic test data

Issues Addressed

- Load Serving Capabilities determined for
 - More Probable Contingencies*
 - Appropriate facility rating for specific contingency
- Maintain sufficient reactive support for local needs
 - Typical distribution circuit designed for $\text{pf} = 1.0$ at time of peak
 - Peak system pf monitored to determine aggregate power factor of distribution system
 - Transmission capacitors installed for voltage support

* CHG&E Transmission Planning Guidelines, pg. 5

Firm Projects

Addressing System Load Serving Capability

Firm Project	Proposed In Service
Standby Operation of East Fishkill 345/115 kV Tr. 2	2012 (Under Construction) (In Service)
115 kV Danskammer Bus Reinforcement	2014 (Under Construction)
115 kV Fishkill Plains – East Fishkill Reconductor	Under Study

Firm Projects

Addressing

Local Areas' Load Serving Capabilities

Local Area	Firm Project	Proposed In Service
Southwest 69 kV	69 kV Rock Tavern – East Walden Rebuild * *Also an infrastructure condition issue	Nov 2012 (Under Construction)
Northwest 69 kV	Rebuild existing 69 kV Hurley Ave to North Catskill for 115 kV	2018
Ellenville Area	Convert from 69 kV to 115 kV (Lines are constructed for 115 kV operation)	2020

Firm Projects

Addressing Infrastructure Condition Issues

Tests have shown a loss of tensile strength for older ACSR conductors

ACSR Conductor Replacement Program	
Firm Project	Proposed In Service
69 kV Honk Falls – West Woodbourne Rebuild	2014 2017
115 kV Pleasant Valley – Todd Hill Rebuild	2015
115 kV Todd Hill – Fishkill Plains Rebuild	2015
69 kV Knapps Corners – Tilcon	2016

Potential Solutions Under Consideration

Addressing Local Areas' Load Serving Capabilities

Local Area	Potential Solutions Under Consideration	Proposed In Service
Southern Dutchess Area	Additional 115 kV Area Input (e.g., East Fishkill to Merritt Park 115 kV)	2019 (Under Study)
Northwest 69 kV	Additional 115 kV Area Input	2020 (Under Study)
Mid-Dutchess Area	Rebuild existing 69 kV Knapps Corners to Pleasant Valley (Southern Section) for 115 kV	2020 (Under Study)

Potential Solutions Under Consideration

Addressing Infrastructure Condition Issues

- Inspections have shown deterioration of structures
- Rebuild the following facilities:

Other Infrastructure Issues	
Potential Solutions Under Consideration	Proposed In Service
Rebuild existing 69 kV Knapps Corners to Pleasant Valley (Northern Section) -Rebuild for 69 kV -Install 115/69 kV transformer at Todd Hill	2015 2019

Comments

Interested parties should forward any comments to:

Richard B. Wright
Senior Engineer – Electric Transmission Planning
Central Hudson Gas & Electric Corporation
284 South Avenue
Poughkeepsie, NY 12601

rwright@cenhud.com