

Gas System Long-Term Plan Appendices

Consolidated Edison Company of New York, Inc.
Orange & Rockland Utilities, Inc.

May 31, 2023

Appendix A

Title	Environmental Justice Policy Statement
GSLTP Reference(s)	Chapter III, Section a, Subsection ii
Purpose	This appendix provides the Companies' Environmental Justice Policy Statement
Contents	Environmental Justice Policy Statement in a word doc
Pages	1

At Consolidated Edison Company of New York, Inc. (CECONY) and Orange & Rockland Utilities, Inc (O&R) we are privileged to serve some of the most diverse communities in the world. We understand the importance of serving the greater good by considering the potential environmental impacts of our activities and investments on all customers. Our commitment to Environmental Justice (EJ) is reflected in our Clean Energy Commitment and Environmental Justice Commitment and demonstrated by the intentional, purposeful, and collective work of our employees. CECONY and O&R established an internal EJ Working Group and Executive Steering Committee to develop educational resources and a roadmap for institutionalizing EJ considerations into everything we do. This group will also inform and enable consistent conversations with external stakeholders.

In the coming years, the Company will:

- **Benchmark with EJ best practices to evaluate opportunities to enhance community engagement strategies**
- **Develop internal GIS mapping of Disadvantaged Communities (DACs) in our service territory**
- **Consider how GIS information can inform capital planning and investment opportunities in a consistent way**
- **Evaluate the impact of our activities on DACs in our service territory**

Appendix B

Title	Forecast Related Information
GSLTP Reference(s)	Chapter VI, Section a Chapter V, Section a, Subsection ii Chapter V, Section b, Subsection ii Chapter V, Section c, Subsection ii
Purpose	This appendix provides our reliability standards, drivers for the sales forecast for the Hybrid and Deep Electrification pathways, and the peak forecast, volume forecast, and customer count figures
Contents	Chart of reliability standards, chart of drivers for the Hybrid and Deep Electrification pathways, a chart each for the peak forecast, volume forecast, and customer count by Company in a word document
Pages	3

Reliability Standards

	Firm Gas Peak Day		Annual Delivered Volume (Firm and Interruptible Non-Generator)	
	CECONY	O&R	CECONY	O&R
Model Type	Deterministic	Deterministic	Deterministic	Deterministic
Temperature Profile	Winter 1933/1934	Winter 1933/1934	30 year normal per last rate case	10 year normal per last rate case
Wind Speed	10 mph	10 mph		
Weather Station	Central Park	Spring Valley	Central Park	Spring Valley
Temperature Variable (Peak) Heating Degree Day (Volume)	0°F TV [30% of prior Gas Day (10 AM – 10 AM) Average Dry Bulb Temperature + 70% of the current Gas Day Average Dry Bulb Temperature]	0°F TV [20% of prior Gas Day (10 AM – 10 AM) Average Dry Bulb Temperature + 80% of the current Gas Day Average Dry Bulb Temperature]	62 HDD	63 HDD
Pressure Requirement	Maintain pressure at or above 150 psig (inlet to distribution regulator stations)	Maintain pressure at or above 150 psig (inlet to distribution regulator stations)	N/A	N/A

Drivers for the hybrid and deep electrification forecasts

	Hybrid	Deep Electrification
Energy Efficiency	2030: 9% reduction in energy consumed per square foot in buildings due to appliance and building shell improvements; 2042: 22%	2030: 20% reduction in space heating load per square foot; 2042: 41% reduction in space heating load per square foot
Electrification	Electrification driven by incentives and lower complexity for low-rise buildings reduces volumes. Hybrid configurations are used in some buildings to mitigate upfront capital costs and ensure resiliency	Electrification of space and water heating aligned with CAC Integration Analysis Scenario 3
New Business	New business is assumed to continue through 2030, but at lower levels than the Reference Case	No new business in the mid-to-long-term as customers are required to electrify
Oil-to-Gas Conversions	Oil-to-gas conversions continue through 2030; however, some oil customers elect to electrify instead	Oil customers electrify in the mid-to-long-term; OTG is discontinued within 5 years
Other	COVID-19 and climate change Impacts not considered	COVID-19 and climate change Impacts not considered
Growth in Floorspace	Floorspace growth by building type and region within NYS are aligned with those provided in the CAC Integration Analysis	Floorspace growth by building type and region within NYS are aligned with those provided in the CAC Integration Analysis
Peak Demand	Same Volume-to-Peak ratio from Reference Case is applied	Same Volume-to-Peak ratio from Reference Case is applied

Peak Forecast Figures

Con Edison																				
MDt/day	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Reference	1,655	1,684	1,704	1,712	1,717	1,711	1,699	1,686	1,669	1,658	1,639	1,616	1,592	1,568	1,543	1,516	1,489	1,461	1,433	1,407
Hybrid	1,655	1,662	1,682	1,697	1,717	1,699	1,656	1,608	1,575	1,547	1,513	1,471	1,412	1,354	1,295	1,236	1,179	1,123	1,079	1,044
Deep Electrification	1,655	1,629	1,610	1,580	1,547	1,474	1,373	1,268	1,204	1,145	1,080	1,008	922	837	751	664	580	495	419	383
O&R																				
MDt/day	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Reference	241	241	240	239	238	236	234	231	228	225	222	219	215	212	208	205	201	197	194	190
Hybrid	241	247	243	240	237	233	229	225	219	213	206	200	192	185	178	172	165	159	154	148
Deep Electrification	241	247	239	230	220	209	197	184	176	167	158	148	138	128	118	108	99	90	83	75

Con Edison and O&R 2023 Gas System Long-Term Plan, **Appendix B**
Forecast Related Information

Volume Forecast Figures

Con Edison																				
TBTU	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Reference	196	197	196	194	190	188	187	185	184	182	179	176	174	171	168	165	162	159	156	153
Hybrid	196	195	193	192	190	187	182	177	173	170	165	161	154	148	141	135	128	122	117	114
Deep Electrification	196	191	185	179	171	162	151	139	133	125	118	110	101	91	82	72	63	54	46	42
O&R																				
TBTU	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Reference	25	25	25	25	25	25	25	24	24	24	23	23	23	22	22	21	21	21	20	20
Hybrid	25	26	26	25	25	25	24	24	23	22	22	21	20	19	19	18	17	17	16	16
Deep Electrification	25	26	25	24	23	22	21	19	18	18	17	16	15	13	12	11	10	10	9	8

Customer Count Figures

Con Edison																				
	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Reference	1,087,730	1,085,071	1,083,097	1,080,831	1,076,603	1,068,713	1,060,724	1,051,132	1,044,308	1,033,742	1,020,950	1,007,803	994,877	981,736	967,686	954,070	940,333	926,766	914,564	902,416
Hybrid	1,087,730	1,085,071	1,083,097	1,080,831	1,076,603	1,068,713	1,060,724	1,046,404	1,032,084	1,017,764	1,003,443	989,123	974,803	960,483	946,163	931,842	917,522	903,202	888,882	874,562
Deep Electrification	1,087,730	1,085,071	1,083,097	1,080,831	1,076,603	1,068,713	1,060,724	1,010,214	959,705	909,195	858,685	808,176	757,666	707,156	656,646	606,137	555,627	505,117	454,608	404,098
O&R																				
	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Reference	140,636	140,636	140,052	139,469	138,885	137,718	136,551	134,800	133,050	131,299	129,549	127,798	125,464	123,713	121,379	119,628	117,294	114,960	113,209	110,875
Hybrid	140,636	140,636	140,052	139,469	138,885	137,718	136,551	133,397	130,243	127,089	123,935	120,781	117,627	114,473	111,319	108,166	105,012	101,858	98,704	95,550
Deep Electrification	140,636	140,636	140,052	139,469	138,885	137,718	136,551	130,451	124,350	118,249	112,149	106,048	99,947	93,847	87,746	81,646	75,545	69,444	63,344	57,243

Appendix C

Title	Supply Related Information
GSLTP Reference(s)	Chapter III Section d Chapter IV, Section c Chapter IV, Section d, Subsection iv Chapter V, Section a, Subsection v Chapter V, Section b, Subsection v Chapter V, Section c, Subsection v
Purpose	This appendix provides the Companies' Pipeline and Storage contracts, descriptions of pending pipeline capacity projects, contract expiration chart, detailed fuel cost assumptions, RNG potential, and the the fuel mix figures
Contents	List Companies' Pipeline and Storage contracts, descriptions of pending pipeline capacity projects, load duration curve, contract expiration chart, assumptions for the cost of gas, RNG potential and fuel mix figures separated by Company in a word document
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List of Pipeline and Storage Delivery Contracts

Pipeline Company Name	Rate Schedule	Daily Quantity (DT)	Winter Quantity (MDT)	Expiration Date
Flowing Gas To Citygate				
Algonquin	AFT-11	5,470	826	10/31/2024
Algonquin	AFT-14	246	37	10/31/2024
Algonquin	AFT-1Z	225	34	10/31/2024
Algonquin	T-1	5,292	799	8/1/2024
Algonquin	AFT-1	20,000	3,020	10/31/2023
Columbia Transmission	FTS	51,294	7,745	3/31/2025
Iroquois	RTS	20,234	3,055	11/1/2023
Iroquois	RTS	20,000	3,020	11/1/2024
Millennium	FT-1	10,000	1,510	3/31/2034
Millennium	FT-1	5,500	831	3/31/2025
Tennessee	FT-A	5,035	760	10/31/2023
Tennessee	FT-A	31,212	4,713	10/31/2023
Tennessee	FT-A	25,000	3,775	10/31/2023
Tennessee	FT-A	30,625	4,624	10/31/2026
Texas Eastern	CDS	55,238	8,341	10/31/2023
Texas Eastern	FT-1	14,770	2,230	10/31/2024
Texas Eastern	FTS	3,075	464	10/31/2024
Texas Eastern	FT-1	10,000	1,510	10/31/2023
Texas Eastern	FT-1	130,000	19,630	6/25/2027
Texas Eastern	FT-1	14,000	2,114	10/31/2033
Texas Eastern	FT-1	3,500	529	10/31/2033
Texas Eastern	FT-1	100,000	15,100	10/31/2024
Texas Eastern	FT-1	30,000	4,530	10/31/2033
Transco	FT	2,084	315	3/22/2023
Transco	FT	3,800	574	4/1/2024
Transco	FT	4,500	680	11/1/2023
Transco	FT	30,344	4,582	10/31/2023
Transco	FT	235,880	35,618	10/31/2026
Transco (Dec - Feb)	FT	10,143	923	3/31/2025
National Fuel/Millennium/Algonquin/Iroquois	FT	61,129	9,230	3/31/2029
Tennessee Release	FT	17,500	2,643	10/31/2026
Transco	FT	50,000	7,550	3/31/2025
Transco	FT	30,000	4,530	10/31/2028
Upstream Pipeline Support				
Dominion	FT	7,575	1,144	10/31/2023
National Fuel	FT-3	31,212	4,713	10/31/2022
Tennessee	FT-A	12,440	1,878	10/31/2023
Tennessee	FT-A	10,000	1,510	3/31/2027
Texas Eastern	CDS	12,047	1,819	10/31/2023
Texas Eastern	CDS	384	58	10/31/2028
Texas Eastern	FT-1	10,836	1,636	10/31/2028
Texas Eastern	CDS	507	77	10/31/2028
Millennium	FT-1	125,000	18,875	3/31/2029
Algonquin	AFT-1RM	100,000	15,100	10/31/2023
Union Gas	FT	20,686	3,124	10/31/2024
TransCanada	FT	20,429	3,085	10/31/2026
North-South Lateral (Stagecoach)	FWS	105,000	15,855	3/31/2028
Marc I (Stagecoach to Transco)	FTS-2	37,500	5,663	3/31/2028

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Storage Company Name	Rate Schedule	Daily Quantity (DT)	Winter Quantity (MDT)	Expiration Date
Transco	SS-2	19,355	2,129	3/31/2028
Transco	GSS	10,040	515	3/31/2028
Dominion	GSS	23,115	2,409	3/31/2025
Texas Eastern	SS-1	69,150	4,169	4/30/2028
Texas Eastern	FSS-1	507	30	4/30/2028
Texas Eastern	SS-1	1,140	100	4/30/2028
Tennessee	FS-MA	9,318	851	10/31/2023
Tennessee	FS-MA	12,440	1,137	10/31/2023
Tennessee	FS-MA	37,507	3,427	10/31/2023
Tennessee	FS-MA	31,212	1,248	10/31/2023
Honeoye	SS-NY	10,220	1,200	3/31/2024
Stagecoach	FSS	170,877	7,201	3/31/2028
Columbia	FSS	20,000	1,432	3/31/2025
National Fuel	FSS	7,871	598	3/31/2024
NGLNG/Algonquin	FST-LG	20,000	500	10/31/2023
Transco	ESS	41,872	353	3/31/2024
Transco	ESS	71,924	661	3/31/2024
Transco	WSS	129,884	12,339	4/30/2024

Total Pipeline and Storage Contract Expiration Chart



Description of Pending Pipeline Capacity Projects

Tenn 300L East

The Tenn 300L project will bring 115 MDt/d to the existing White Plains, Rye and Knollwood citygates in Westchester. The increase in capacity will be accomplished through installation of additional compressors at Station 321 in Susquehanna County, PA and Station 325 in Sussex County, NJ, as well as a new Station 327 in Passaic County, NJ. On September 2, 2022 FERC issued an order Issuing Certificate for the above-referenced docket for Tennessee Gas Pipeline Company. Tennessee Pipeline has been granted the requests issuance of a notice to proceed with construction for all three Compressor Stations (Sta 321, Sta 325, and Sta 327). The target in-service date is currently November 1, 2023.

Iroquois ExC

The ExC Project will bring an additional capacity of 62.5 MDt/d from Waddington to Hunts Point for Con Edison and the same capacity volume to South Commack for National Grid through the Iroquois pipeline. The increase in capacity will be done by adding 3 or 4 compressors with gas cooling to existing compressor stations in NY and CT. On March 25, 2022, FERC issued a certificate of public convenience and necessity to Iroquois, authorizing it to construct and operate the proposed ExC Project facilities. Iroquois' applications for modifications to its Air State Facility permits at its Athens, New York and Dover, New York compressor stations for the ExC Project are pending before the New York State Department of Environmental Conservation. Also, Iroquois' applications to modify its existing New Source Review Permits for its Brookfield Compressor Station, located in Connecticut, for the ExC Project are pending before the Connecticut Department of Energy and Environmental Protection. In addition, On October 24, 2022, Iroquois submitted its response to the NYDEC's request to supplement the 3rd Request for Additional Information (RFAI) on the air permit application. The project has an estimated target in-service date of Winter 2025/2026.

Mountain Valley Pipeline Project

The Mountain Valley Pipeline (MVP) Project is a 42-inch natural gas pipeline system that spans approximately 303 miles from northwestern West Virginia to southern Virginia. The MVP Project is constructed and owned by Mountain Valley Pipeline, LLC. The Project is expected to provide up to two million dekatherms per day of firm transmission capacity from the Marcellus and Utica shale production area to markets in the Mid- and South Atlantic regions. The MVP Project will extend the Equitrans transmission system in Wetzel County, West Virginia, to Transcontinental Gas Pipeline Company's (Transco) Zone 5 compressor station 165 in Pittsylvania County, Virginia.

On October 23, 2015, Mountain Valley filed a formal application with the FERC and on October 13, 2017, the FERC issued a Certificate of Public Convenience and Necessity for the project. Con Edison Transmission, Inc., a subsidiary of Consolidated Edison Inc., has ownership interest in MVP.

On January 21, 2016, Con Edison executed a precedent agreement for 250 MDt/d of MVP capacity and associated Equitrans capacity for a term of 20 years. Mountain Valley Pipeline has had considerable construction and legal challenges to overcome since being announced in 2014. As a result, the completion date has been pushed back a few times. On June 24, 2022, MVP filed a motion requesting a four-year certificate extension of time and on August 23, 2022, FERC staff issued an Order granting requests for such extension until October 13, 2026. Furthermore, on May 15, 2023, the Bureau of Land Management

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released a decision of its support to authorize a 30-year right-of-way and temporary use permit, allowing the project to cross the Jefferson National Forest. With these permits completed, the only remaining hurdle is for the West Virginia Department of Environmental Protection to re-issue their 401-stream-crossing permit. Once that is completed the Army Corps of Engineers can issue their 404-permit to allow construction to resume on the project. The target in-service date is currently winter 2023-2024.

Supply Component Figures

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
	2022/2023	2023/2024	2024/2025	2025/2026	2026/2027	2027/2028	2028/2029	2029/2030	2030/2031	2031/2032	2032/2033	2033/2034	2034/2035	2035/2036	2036/2037	2037/2038	2038/2039	2039/2040	2040/2041	2041/2042
Existing Delivered Services	135	33	3																	
TGP East 300		115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115	115
Iroq ExC				63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63
CNG	25																			
LNG	166	166	166	166	166	166	166	166	166	166	166	166	166	166	166	166	166	166	166	166
Rev AMA procurement	98	120	120	120	80	80	50	50	50	50	50	50	50							
Storage	251	251	251	251	251	251	251	251	251	251	251	251	251	251	251	251	251	251	251	251
Firm Transportation with Storage Access	277	277	277	277	277	277	277	277	277	277	277	277	277	277	277	277	277	277	277	277
Firm Transportation	939	939	939	939	939	939	939	939	939	939	939	939	939	939	939	939	939	939	939	939

Fuel Cost Assumptions

Fuel	Average Price	Assumption/Rationale
Fossil Gas (without transport and storage costs)	\$3.82	20-year average; reflects pricing at the Henry Hub based on Wood Mackenzie forecast
Fossil Gas (with transport and storage costs)	\$5.64	20-year average price among pathways; transport and storage costs added to \$3.82 as follows: <ul style="list-style-type: none"> Starting in 2022, \$1.75/Dt added (based on 2022 total demand costs divided by 2022 actual annual volumes not including plants) Starting in 2038 for reference case, \$1.90/Dt (based on 2022 total demand costs not including peaking divided by 90% (ratio of peak to sales that our current 176 Mdt of peaking would represent) of 2022 actual annual volumes) Starting in 2031 for Hybrid, \$1.90/Dt Starting in 2028 for Deep Electrification, \$1.90/Dt
Certified Gas	\$5.74	Assumes \$0.10/Dt premium on top of fossil gas, per initial discussions Con Edison has had with suppliers
Renewable Natural Gas	\$19.26	Uses weighted average costs by feedstock, per NYSERDA's "Potential of Renewable Natural Gas in New York State" report (2022) <ul style="list-style-type: none"> Animal manure = \$34.56/MMBTU (21%) Food waste = \$23.86/MMBTU (5%) Landfill gas = \$11.29/MMBTU (57%) Wastewater resource recovery facilities = \$27.68/MMBTU (4%) Agricultural residue = \$25.67/MMBTU (0.4%)

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Fuel	Average Price	Assumption/Rationale
		<ul style="list-style-type: none"> Energy crops = \$25.67/MMBTU (1%) Forestry and forest product residue = \$25.67/MMBTU (0.3%) Municipal solid waste = \$25.67/MMBTU (13%)
Clean Hydrogen	\$9.31	Uses NYERSDA production cost estimate from the Integration Analysis; applied DOE Hydrogen Shot goal of 80% decline in production cost, which is assumed to be achieved by 2031
Synthetic Natural Gas	\$23.13	Using equation derived from data in https://doi.org/10.1016/j.apenergy.2019.113594 (Jachin Gorre, Felix Ortloff, Charlotte van Leeuwen, “Production costs for synthetic methane in 2030 and 2050 of an optimized Power-to-Gas plant with intermediate hydrogen storage”); assumed continuous operation with 0 standby hours (full load hours set to 8760); hydrogen shot goal applied to hydrogen production portion

RNG Potential

		Within CECONY and ORU	Share of eastern U.S.
	Source	NYERSDA (Achievable Deployment Scenario)	Carbon Neutral NYC Study
	share of RNG production	100% of NYC CECONY gas territory + 60% of Hudson Valley	12% of Mid-Atlantic + 4% of rest of Eastern U.S.
Anaerobic Digestion	Animal Manure	0.1	10.6
	Food Waste	0.9	1.6
	Landfill Gas	3.1	26.2
	Wastewater resource recovery facilities	0.8	0.6
Thermal Gasification	Agricultural Residue	0.2	0
	Energy Crops	0.5	0
	Forestry and Forest Product Residue	0.1	0
	Municipal Solid Waste	6.8	0
	Total	12 TBTU	39 TBTU

Source: Pathways to Carbon-Neutral NYC, NYERSDA Potential of RNG in NYS, SP analysis

➡ **46 TBTU available to CECONY, 5 TBTU available to ORU**

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Fuel Mix Figures

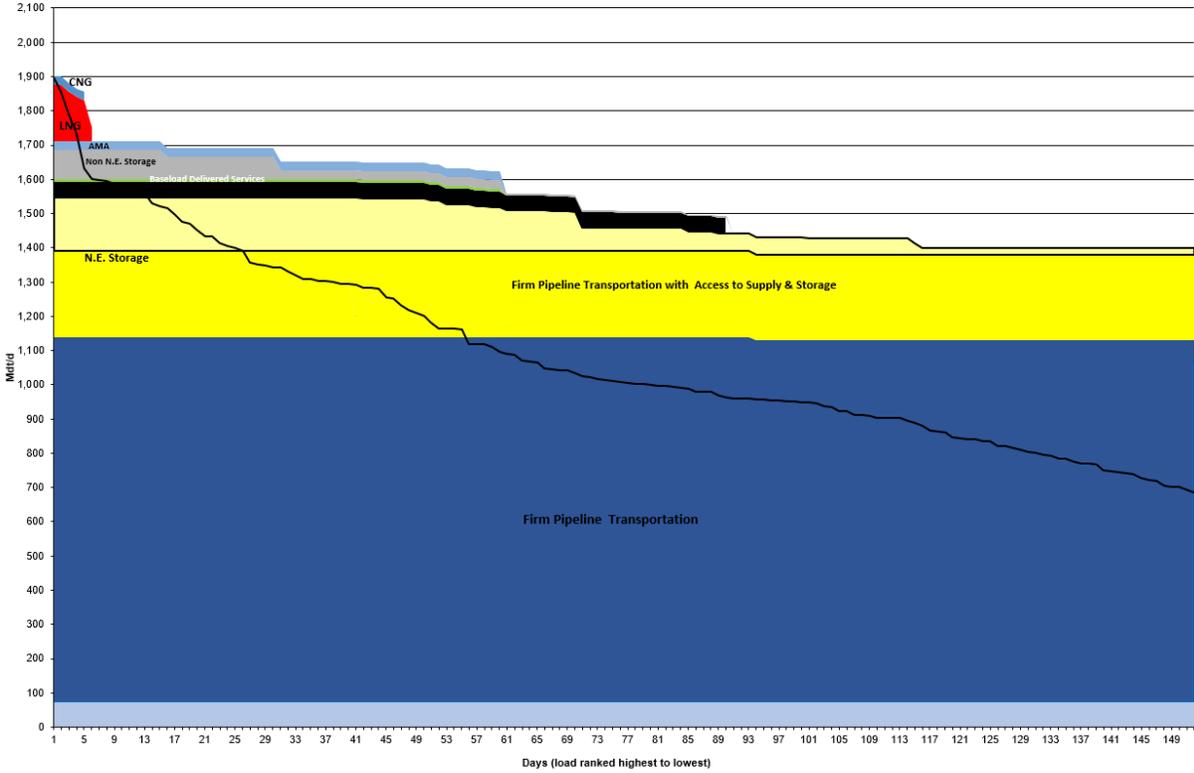
Reference Pathway		Gas Sales Volume (TBTU)																				
Con Edison		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Certified Natural Gas %	0%	0%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Fossil Gas	185.4	195.7	195.5	195.3	195.0	194.6	194.0	193.1	192.0	189.7	187.0	184.0	180.6	176.0	171.4	166.7	162.0	157.5	153.1	149.8	147.0	147.0
Renewable Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Green Hydrogen	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Synthetic Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total gas volume (TBTU)	185.4	195.7	195.5	195.3	195.0	194.6	194.0	193.1	192.0	189.7	187.0	184.0	180.6	176.0	171.4	166.7	162.0	157.5	153.1	149.8	147.0	147.0
O&R		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Certified Natural Gas %	0%	0%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Fossil Gas	24.91	24.66	25.12	25.25	25.10	25.03	24.76	24.52	24.23	23.92	23.60	23.26	22.91	22.55	22.18	21.81	21.43	21.05	20.67	20.29	19.90	19.90
Renewable Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Green Hydrogen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Synthetic Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total gas volume (TBTU)	24.91	24.66	25.12	25.25	25.10	25.03	24.76	24.52	24.23	23.92	23.60	23.26	22.91	22.55	22.18	21.81	21.43	21.05	20.67	20.29	19.90	19.90

Hybrid Pathway		Gas Sales Volume (TBTU)																				
Con Edison		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Certified Natural Gas %	0%	0%	10%	21%	31%	42%	52%	63%	73%	84%	94%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Fossil Gas	185.4	195.7	194.8	193.4	191.8	189.7	186.9	182.1	172.3	165.2	157.6	149.5	140.8	130.5	120.1	109.6	99.2	89.0	72.5	68.0	64.0	64.0
Renewable Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.2	8.1	12.0	15.9	19.8	23.7	27.6	31.5	35.4	39.2	43.1	43.1	43.1	43.1
Green Hydrogen	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.4	6.4	6.4	6.4
Synthetic Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total gas volume (TBTU)	185.4	195.7	194.8	193.4	191.8	189.7	186.9	182.1	176.5	173.3	169.5	165.3	160.6	154.1	147.6	141.0	134.5	128.3	122.1	117.5	113.5	113.5
O&R		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Certified Natural Gas %	0%	0%	10%	21%	31%	42%	52%	63%	73%	84%	94%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Fossil Gas	25.8	25.9	25.8	25.6	25.3	24.9	24.5	24.0	23.0	22.0	20.8	19.7	18.5	17.3	16.0	14.8	13.6	12.5	10.5	9.9	9.4	9.4
Renewable Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.0	1.5	1.9	2.4	2.9	3.4	3.8	4.3	4.8	5.3	5.3	5.3	5.3
Green Hydrogen	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9	0.9	0.9
Synthetic Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total gas volume (TBTU)	25.8	25.9	25.8	25.6	25.3	24.9	24.5	24.0	23.5	22.9	22.3	21.6	20.9	20.2	19.4	18.6	17.9	17.3	16.6	16.1	15.5	15.5

Deep Electrification Pathway		Gas Sales Volume (TBTU)																				
Con Edison		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Certified Natural Gas %	0%	0%	10%	21%	31%	42%	52%	63%	73%	84%	94%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Fossil Gas	185.4	195.7	190.9	185.1	178.6	170.9	162.1	151.0	138.7	131.7	124.2	116.3	108.0	98.2	88.3	78.4	68.5	58.9	49.3	41.0	37.0	37.0
Renewable Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.8	1.3	1.7	2.1	2.5	2.9	3.3	3.8	4.2	4.6	4.6	4.6	4.6
Green Hydrogen	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Synthetic Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total gas volume (TBTU)	185.4	195.7	190.9	185.1	178.6	170.9	162.1	151.0	139.1	132.5	125.5	118.0	110.1	100.7	91.3	81.7	72.3	63.0	53.9	45.6	41.6	41.6
O&R		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Certified Natural Gas %	0%	0%	10%	21%	31%	42%	52%	63%	73%	84%	94%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Fossil Gas	25.8	26.1	25.7	25.2	24.2	23.1	21.9	20.7	18.3	17.4	16.4	15.3	14.2	13.1	11.9	10.8	9.7	8.7	7.7	6.9	6.1	6.1
Renewable Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.1	1.2	1.3	1.4	1.5	1.5	1.6	1.7	1.8	1.8	1.8	1.8
Green Hydrogen	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Synthetic Natural Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total gas volume (TBTU)	25.8	26.1	25.7	25.2	24.2	23.1	21.9	20.7	19.3	18.4	17.5	16.5	15.5	14.5	13.4	12.3	11.3	10.4	9.5	8.6	7.9	7.9

Load Duration Curve

CEI GAS CUSTOMER 2023-24 WINTER SEASONAL Load vs. Utilized Assets



Appendix D

Title	Gas System Cost Related Information
GSLTP Reference(s)	Chapter V, Section a, Subsection iii Chapter V, Section b, Subsection iii Chapter V, Section c, Subsection iii
Purpose	To provide the components and figures for the capital, regulatory assets, and O&M costs separated by Company
Contents	Word document
Pages	2

Capital Cost Components

<p>CECONY</p> <ul style="list-style-type: none"> Leak Prone Main Replacement Program (MRP/GIRRP) Non Leak Prone Main Replacement Program (DIME) Service Replacement Pressure Control Projects Regulator Station Projects Supply Mains Projects Large Diameter Gas Main Program Transmission/Generation Projects Meter Program (50%) / NGD (50%) Customer Connections System Reinforcement Program/Winter Load Relief Public Improvement Low Carbon Fuels LNG Projects Tunnel Projects AMI - Gas Meters Information Technology Projects CES Programs Gas Distribution Programs Other 	<p>O&R</p> <ul style="list-style-type: none"> Other Capital Programs New Business Public Improvement Reliability/Safety LCF Capital Regulatory Assets (NPAs) MRP
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Con Edison and O&R 2023 Gas System Long-Term Plan, **Appendix D**
Gas System Cost Related Information

Capital and Regulatory Asset Figures

INVESTMENTS (\$M)			2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
UTILITY	Pathway	TYPE																				
CECONY	REFERENCE	CAPITAL	\$988	\$1,030	\$1,007	\$1,040	\$1,071	\$1,022	\$1,015	\$1,003	\$982	\$973	\$966	\$964	\$956	\$926	\$905	\$884	\$873	\$628	\$293	\$291
CECONY	REFERENCE	REG ASSET	\$59	\$64	\$65	\$56	\$43	\$35	\$27	\$21	\$18	\$18	\$18	\$18	\$4	\$0	\$0	\$0	\$0	\$0	\$0	\$0
ORU	REFERENCE	CAPITAL	\$63	\$63	\$63	\$63	\$63	\$63	\$62	\$62	\$22	\$21	\$21	\$21	\$20	\$20	\$19	\$19	\$19	\$19	\$18	\$18
ORU	REFERENCE	REG ASSET	\$0	\$0	\$3	\$3	\$3	\$3	\$3	\$3	\$1	\$1	\$1	\$1	\$1	\$1	\$1	\$1	\$1	\$1	\$1	\$0
CECONY	HYBRID	CAPITAL	\$988	\$1,030	\$1,007	\$906	\$915	\$865	\$691	\$698	\$710	\$696	\$688	\$681	\$675	\$581	\$577	\$572	\$560	\$546	\$327	\$325
CECONY	HYBRID	REG ASSET	\$59	\$64	\$65	\$56	\$43	\$35	\$27	\$21	\$18	\$18	\$18	\$18	\$4	\$0	\$0	\$0	\$0	\$0	\$0	\$0
ORU	HYBRID	CAPITAL	\$63	\$63	\$63	\$65	\$65	\$65	\$64	\$64	\$23	\$23	\$22	\$22	\$21	\$20	\$19	\$19	\$19	\$18	\$18	\$17
ORU	HYBRID	REG ASSET	\$0	\$0	\$3	\$3	\$3	\$3	\$3	\$3	\$1	\$1	\$1	\$1	\$1	\$1	\$0	\$0	\$0	\$0	\$0	\$0
CECONY	DEEP	CAPITAL	\$988	\$1,030	\$1,007	\$816	\$822	\$788	\$436	\$431	\$426	\$292	\$285	\$278	\$240	\$136	\$129	\$122	\$114	\$107	\$100	\$93
CECONY	DEEP	REG ASSET	\$59	\$71	\$66	\$53	\$34	\$23	\$14	\$9	\$6	\$5	\$4	\$4	\$3	\$0	\$0	\$0	\$0	\$0	\$0	\$0
ORU	DEEP	CAPITAL	\$63	\$63	\$46	\$47	\$47	\$24	\$24	\$23	\$10	\$10	\$10	\$9	\$9	\$8	\$8	\$7	\$7	\$7	\$6	\$5
ORU	DEEP	REG ASSET	\$0	\$0	\$2	\$2	\$2	\$1	\$1	\$1	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
CECONY	DEEP w/ Depreciation	CAPITAL	\$988	\$1,030	\$1,007	\$816	\$822	\$788	\$436	\$431	\$426	\$292	\$285	\$278	\$240	\$136	\$129	\$122	\$114	\$107	\$100	\$93
CECONY	DEEP w/ Depreciation	REG ASSET	\$59	\$71	\$66	\$53	\$34	\$23	\$14	\$9	\$6	\$5	\$4	\$4	\$3	\$0	\$0	\$0	\$0	\$0	\$0	\$0
ORU	DEEP w/ Depreciation	CAPITAL	\$63	\$63	\$46	\$47	\$47	\$24	\$24	\$23	\$10	\$10	\$10	\$9	\$9	\$8	\$8	\$7	\$7	\$7	\$6	\$5
ORU	DEEP w/ Depreciation	REG ASSET	\$0	\$0	\$2	\$2	\$2	\$1	\$1	\$1	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
O&M (\$M)			2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
UTILITY	Pathway	TYPE																				
CECONY	REFERENCE	O&M	174	183	190	194	198	194	194	194	194	194	194	194	194	194	194	194	194	190	190	190
ORU	REFERENCE	O&M	26	26	26	26	26	26	26	25	25	25	25	24	24	24	24	23	23	23	23	22
CECONY	HYBRID	O&M	174	183	190	191	194	192	190	186	182	177	173	169	165	161	156	152	148	179	172	167
ORU	HYBRID	O&M	26	26	26	26	26	26	26	25	25	24	24	24	23	23	22	22	21	21	21	20
CECONY	DEEP	O&M	174	183	190	191	194	192	189	181	174	165	157	150	136	129	121	113	106	92	82	75
ORU	DEEP	O&M	26	26	26	26	26	26	26	25	24	23	22	22	21	20	19	18	18	17	16	15
CECONY	DEEP w/ Depreciation	O&M	174	183	190	191	194	192	189	181	174	165	157	150	136	129	121	113	106	92	82	75
ORU	DEEP w/ Depreciation	O&M	26	26	26	26	26	26	26	25	24	23	22	22	21	20	19	18	18	17	16	15

O&M Cost Drivers

<p>CECONY Construction GDS Shared</p>	<p>O&R List Leak Repair Emergency Response Inspection Activities Locating Activities Station Maintenance Emergency Dispatch Engin/Compliance/Planning/Misc</p>
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O&M Figures

O&M (\$M)			2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
UTILITY	Pathway	TYPE																				
CECONY	REFERENCE	O&M	174	183	190	194	198	194	194	194	194	194	194	194	194	194	194	194	194	190	190	190
ORU	REFERENCE	O&M	26	26	26	26	26	26	26	25	25	25	25	24	24	24	24	23	23	23	23	22
CECONY	HYBRID	O&M	174	183	190	191	194	192	190	186	182	177	173	169	165	161	156	152	148	179	172	167
ORU	HYBRID	O&M	26	26	26	26	26	26	26	25	25	24	24	24	23	23	22	22	21	21	21	20
CECONY	DEEP	O&M	174	183	190	191	194	192	189	181	174	165	157	150	136	129	121	113	106	92	82	75
ORU	DEEP	O&M	26	26	26	26	26	26	26	25	24	23	22	22	21	20	19	18	18	17	16	15
CECONY	DEEP w/ Depreciation	O&M	174	183	190	191	194	192	189	181	174	165	157	150	136	129	121	113	106	92	82	75
ORU	DEEP w/ Depreciation	O&M	26	26	26	26	26	26	26	25	24	23	22	22	21	20	19	18	18	17	16	15

Appendix E

Title	Emissions Related Information
GSLTP Reference(s)	Chapter V, Section a, Subsection iv Chapter V, Section b, Subsection iv Chapter V, Section c, Subsection iv
Purpose	Provide building assumptions and emissions figures
Contents	Tables of baseline equipment efficiency, building energy use intensity, gas emission factors and emission figures word document
Pages	2

Baseline Equipment Efficiency

	Equipment	Single Family	Single Family	Multi-Family	Low-Rise	Multi-Family	High-Rise	Commercial	Low-Rise	Commercial	High-Rise
Space Heating	Electric Resistance	95%		95%		95%		95%		95%	
	ASHP	287%		287%		262%		262%		199%	
	GSHP	338%		338%		292%		292%		346%	
	Oil Boiler/Furnace	80%		80%		80%		80%		80%	
	Gas Boiler/Furnace	80%		80%		80%		80%		80%	
Water Heating	Electric Resistance	95%		95%		95%		95%		95%	
	Heat Pump Water Heater	250%		250%		250%		250%		250%	
	Gas/Oil	70%		70%		70%		70%		70%	

Building Energy Use Intensity

Building type	Space heating	Water heating
	Annual space heating EUI (kBtu/sqft)	Annual water heating EUI (kBtu/sqft)
Single Family	49	18.6
1-4 Family	38	18.6
Large Multi-Family	49	16.9
Commercial	48	3.83

Natural Gas Emissions Factors

tCO ₂ e/MMBTU (20-Year GWP)	2022	2030	2042
Fossil	0.1041	0.1026	0.1012
Certified Gas	0.0846	0.0832	0.0817
RNG	0.0624	0.0609	0.0595
Clean Hydrogen	0.0000	0.0000	0.0000

Con Edison and O&R 2023 Gas System Long-Term Plan, **Appendix E**
Emissions Related Information

Emissions Figures

tCO ₂ e	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Reference	21,884,862	22,860,271	22,820,091	22,644,842	22,357,310	21,923,723	21,717,645	21,509,240	21,263,766	21,063,825	20,788,086	20,462,081	20,124,015	19,784,032	19,433,288	19,056,716	18,682,398	18,298,474	17,911,151	17,586,468	17,256,039
Hybrid	21,884,862	22,860,271	22,381,018	21,709,219	20,980,672	20,208,343	19,375,976	18,372,437	17,150,167	16,297,238	15,433,917	14,715,598	14,143,589	13,428,586	12,709,964	11,982,990	11,270,617	10,580,723	9,979,866	8,940,202	8,554,861
Deep Electrification	21,884,862	22,860,271	21,996,923	20,910,389	19,728,883	18,468,828	17,127,965	15,618,674	14,046,683	13,042,704	12,033,218	11,142,129	10,366,178	9,466,052	8,562,127	7,651,395	6,754,038	5,876,795	5,005,491	4,270,002	3,881,317