



Natural Gas Long-Term Plan Stakeholder Information Session

Cases: 20-G-0131
23-G-0437

NYSEG and RG&E

September 13, 2023
13/09/2023



New York State Electric & Gas (NYSEG) and Rochester Gas and Electric (RG&E) (together, the Companies) are hosting this Information Session to share background information regarding the natural gas system in general and the NYSEG and RG&E systems specifically. The aim of this evening's program is to enable stakeholders to effectively participate in the gas system long-term planning process.

Q&A will follow each presentation to address matters related to the material presented.

Please use the "raise hand" feature of the meeting platform so that we know when there are questions to address. (We will answer questions in the order they are received.)



Agenda:

1. Introduction to the Natural Gas Industry
2. NYSEG and RG&E: Company Overview
3. Customer Demographics, Disadvantaged Communities
4. Demand Forecasting, Gas Supply Planning, Procurement, Transportation, Storage
5. Gas Engineering, Operations
6. Utility Emissions
7. Decarbonization Efforts



1

Introduction to the Natural Gas Industry

Yvette LaBombard

Senior Director /Gas and Hydro Engineering /Networks



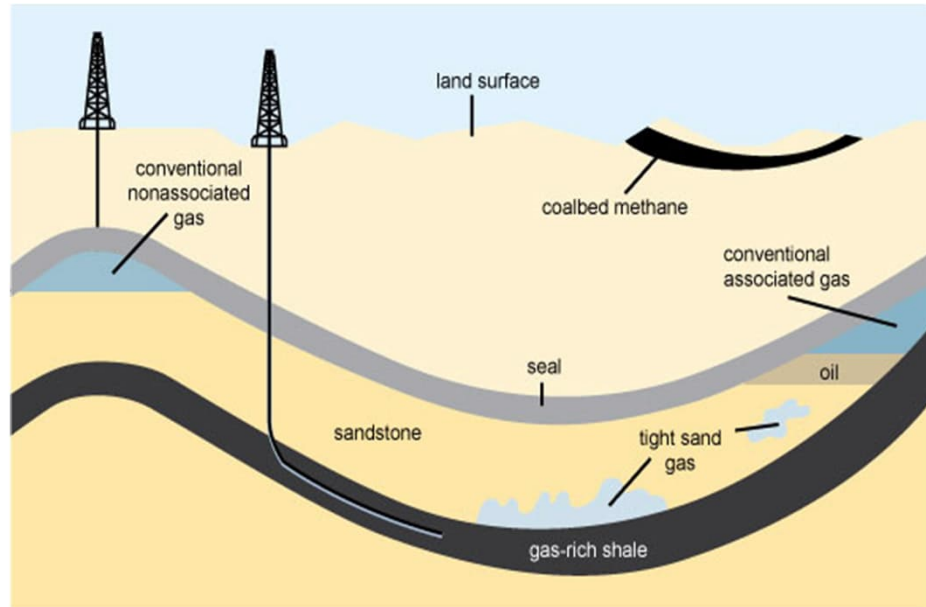
What is Natural Gas?

- Natural gas is a colorless, odorless, shapeless gas in pure form.
- Generally composed of methane (96%), Ethane (2%), Propane (0.25%), and Butane (0.25%), with traces of other hydrocarbons (<0.5% combined).
- Non-hydrocarbon components may be part of natural gas at the wellhead (water vapor, Carbon Dioxide, Nitrogen, Helium and Hydrogen Sulfide).
- Impurities such as CO₂ and H₂S must be removed before transport and commercialization as they can corrode pipelines, are toxic, and are significant sources of air pollution.

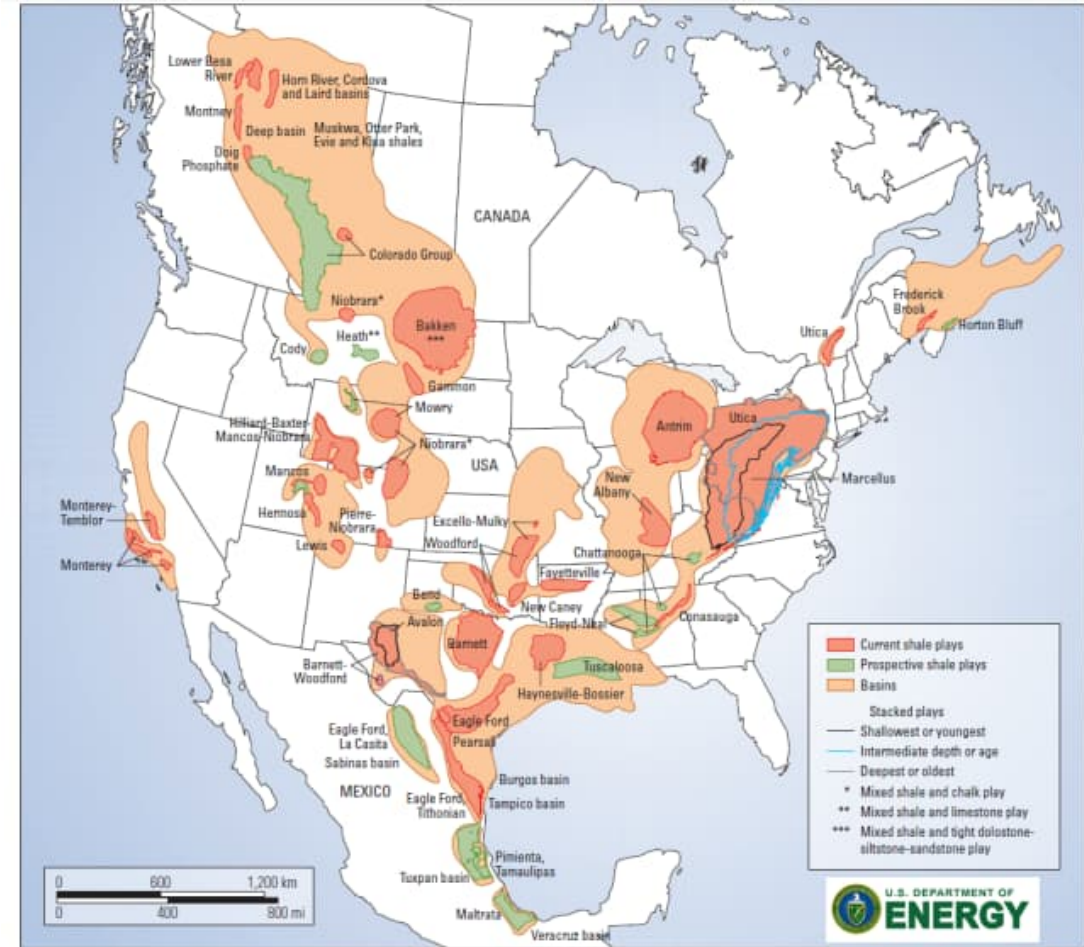


Where does natural gas come from?

Natural Gas Resource Pools



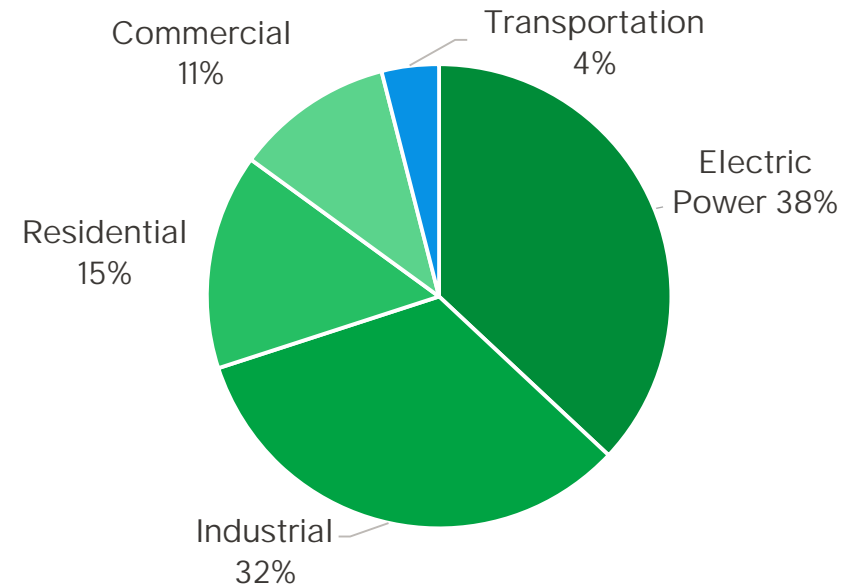
Source: <https://www.eia.gov/energyexplained/natural-gas/>





How is Natural Gas Used?

- Electric power generation
 - Power plants
 - Distributed generation
 - Fuel cells, engines, and turbines
 - Secondary generators, typically used when primary power sources fail
- Industrial customers
 - Fuel for industrial processes
 - Feedstock for chemical processes and products
- Residential customers
 - Heating, cooking, air conditioning, etc.
- Commercial customers
 - Space heating, water heating, food preparation
- Transportation/Vehicle consumption
 - Compressed natural gas (CNG)
 - Liquefied natural gas (LNG)



The U.S. consumed ~32.31 trillion cubic feet (Tcf) of natural gas in 2022, which is roughly 33% of U.S. total energy consumption

Source: <https://www.eia.gov/energyexplained/natural-gas/use-of-natural-gas.php>



Units and Conversions

- BTU (British thermal unit) measures the *heat value* of natural gas. One BTU is the amount of heat energy required to raise one pound of water by 1°F.
- CCF (one hundred cubic feet) measures the *quantity* or volume of gas.
- Gas utilities typically bill customer usage by either “therms” (*heat value*) or by cubic feet (*volume*).
 - 1 natural gas “therm” = 100,000 Btu
 - “MCF” and “CCF” are both common volume units. 1 MCF = 10 CCF



1 CF	=	0.01 CCF	=	0.01 MCF	≡	1,000 Btu	=	0.001 MMBtu	=	0.001 Dth	=	0.01 Th
100 CF	=	1 CCF	=	0.1 MCF	≡	100,000 Btu	=	0.1 MMBtu	=	0.1 Dth	=	1 Th
1,000 CF	=	10 CCF	=	1 MCF	≡	1,000,000 Btu	=	1 MMBtu	=	1 Dth	=	10 Th

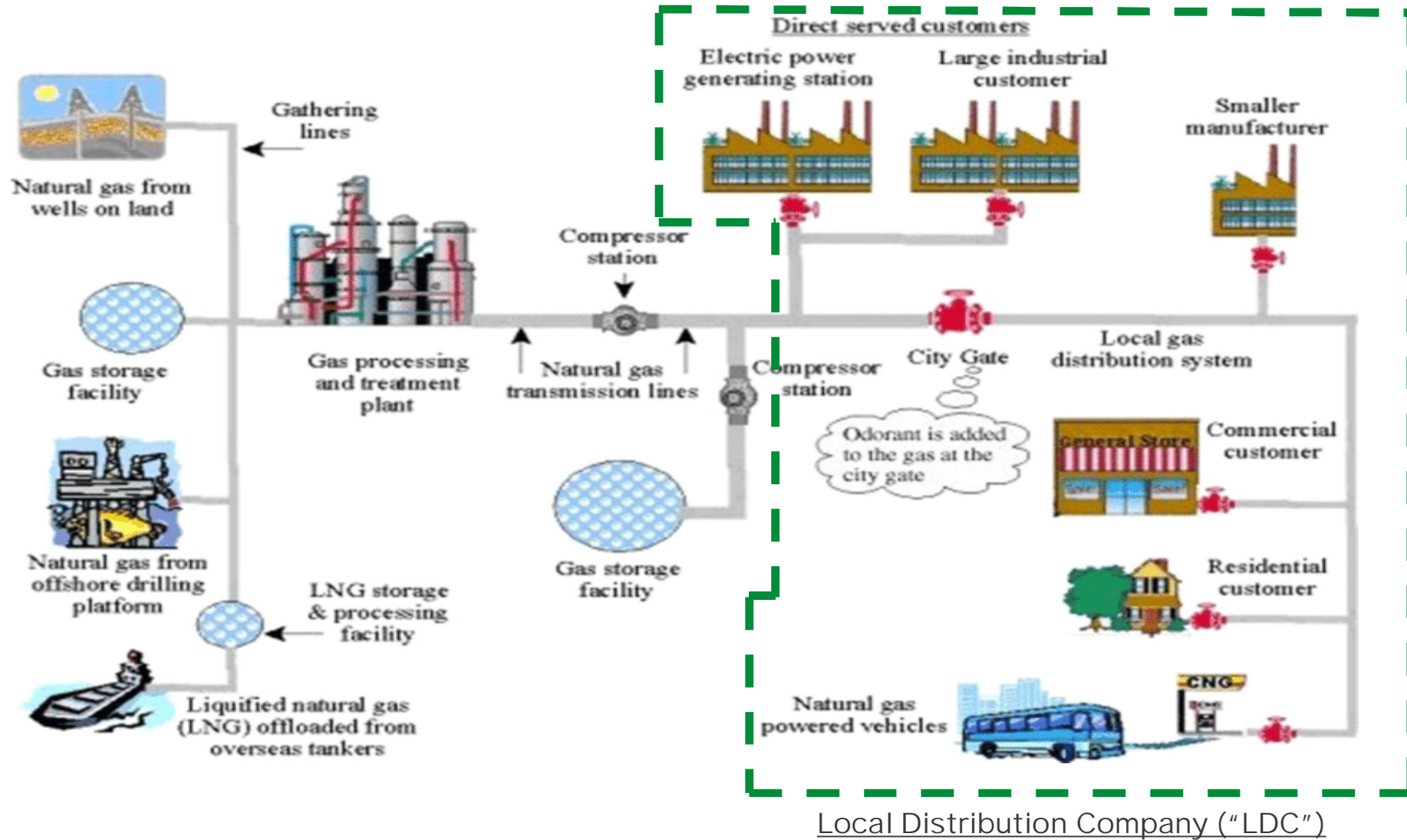
Assumes BTU factor is 1 (i.e., 1,000 BTU/CF of natural gas). Actual BTU conversion (based on heat content of gas) varies by region by month.



Units and Conversions

- Corrected Gas Volume = Metered Volume x Temperature Factor x Pressure Factor x Energy Content Factor
 - Temperature Factor = $\frac{460+60}{460+ \text{gas temp}}$
 - Pressure Factor = $\frac{14.4 + \text{gauge pressure}}{14.73}$
 - Energy Content Factor = $\text{BTU/ft}^3/1000$

The Natural Gas Value Chain



How is Natural Gas Transported?

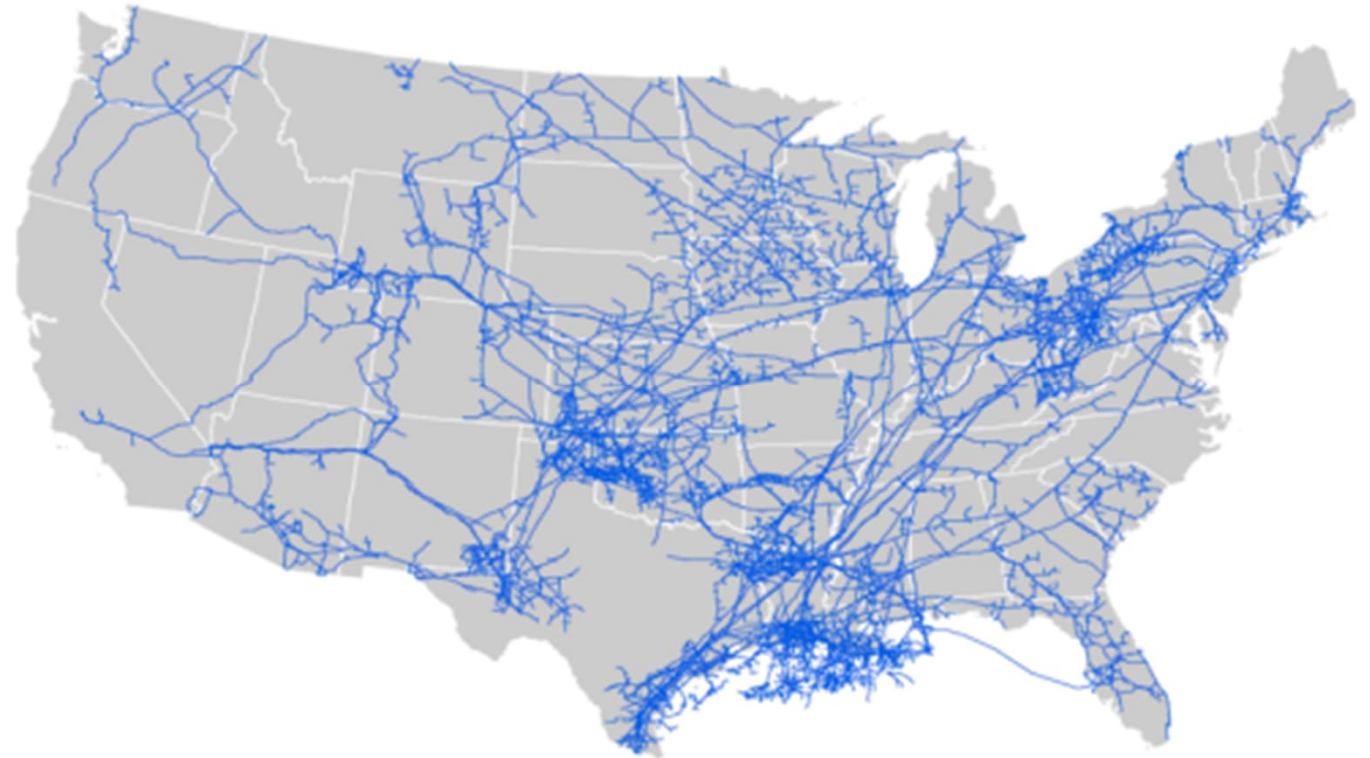


The Interstate Natural Gas Pipeline System:

- The predominant mode of transportation for natural gas in the U.S
- Subject to safety regulation by the Dept. of Transportation, Pipelines and Hazardous Materials Safety Administration (PHMSA)
- Economic regulation by the Federal Energy Regulatory Commission (FERC)

Interstate pipelines are highly pressurized, with compression systems at various intervals to maintain pressure and flow

U.S. Interstate Natural Gas Pipelines



Source: Congressional Research Service

How is Gas Stored?



Above ground storage

- Some natural gas utilities use above ground storage facilities located on the distribution system

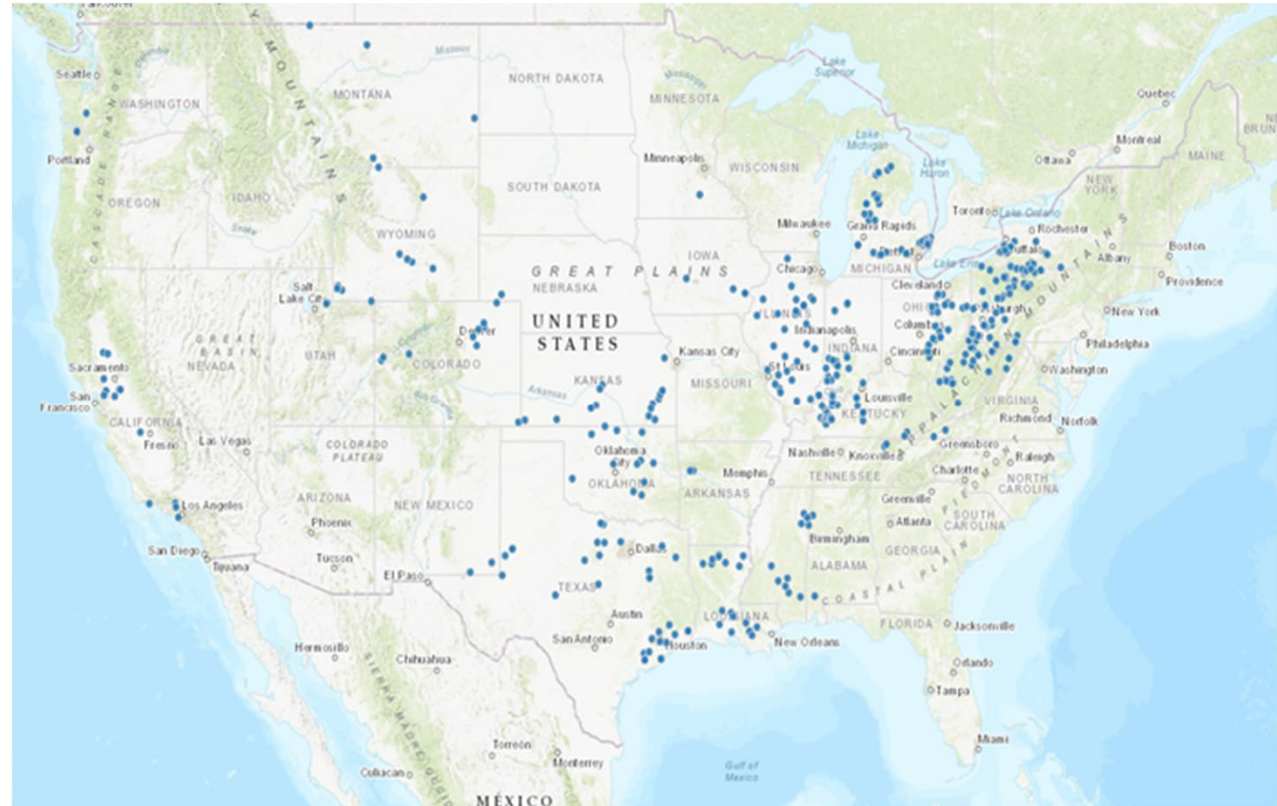
Underground Natural Gas Storage Facilities

- Geologic storage facilities take the form of reused oil and gas wells

Fundamental Storage Concepts

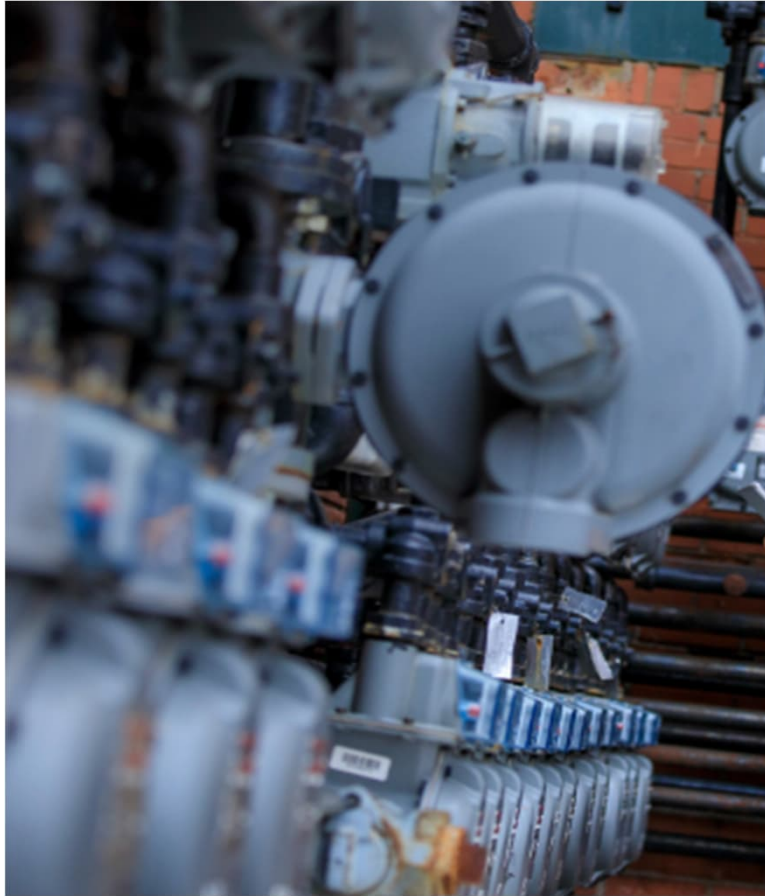
- Production area
- Market Area
 - Storage provides some protection from price volatility
 - Serves a reliability purpose as well

Natural Gas Underground Storage



Sources: <https://atlas.eia.gov/datasets/natural-gas-underground-storage/explore?location=37.824831%2C-97.089969%2C5.00>

Distribution systems involve a complex set of infrastructure components



Natural gas travels from the city gate station to gas companies and finally, to end users

- Distribution lines are often referred to as “mains” and “services”
- Regulators control each distribution system, and maintain optimal gas pressure to ensure safe practices and enhance efficiency
- As gas travels closer to end-users, the “mains” connect to smaller pipes called “services”
 - Pipe diameter and gas pressure decrease as the distribution system gets closer to end-use customers



What we do:

- Real-time monitoring of the system
- Pressure control
- Load balancing
- Contingency Planning – day ahead, current day, current hour
- Emergency Operations – trouble, outage management

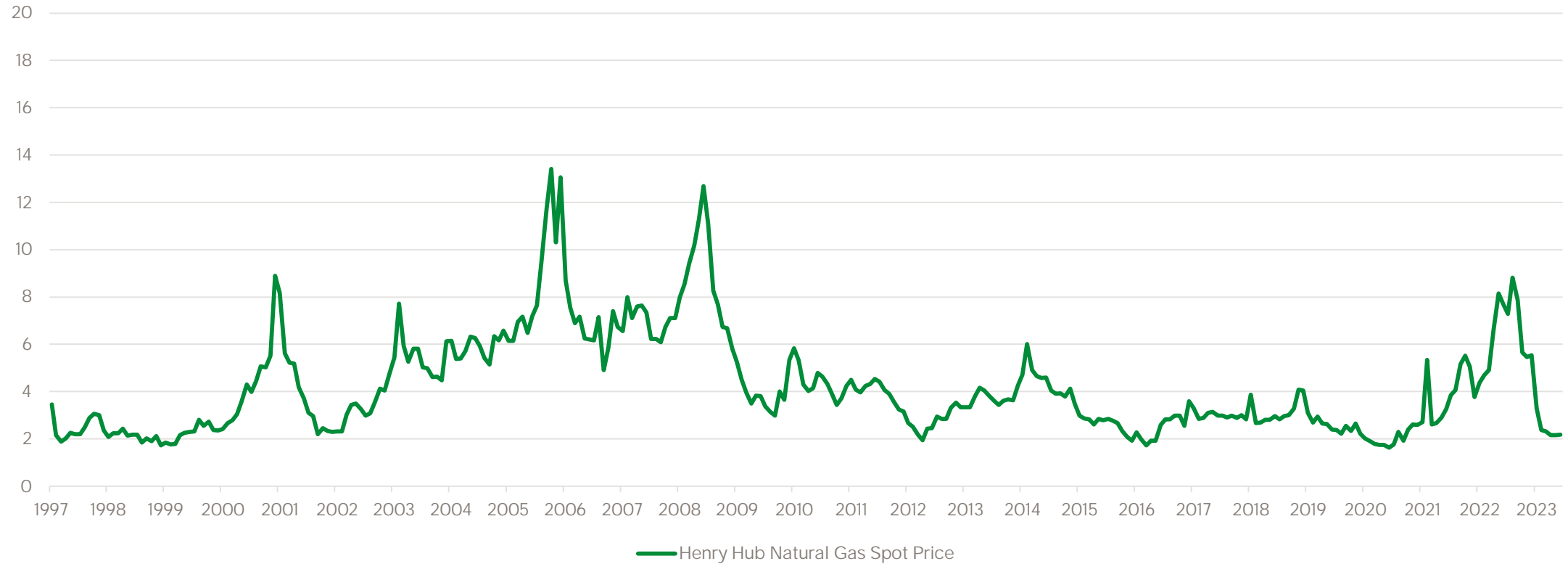


Key Work Focus Areas

- Safety
 - Public
 - Customer
 - Employee
- Meet O&M and Capital Financial Targets
- Employee Training
- Rate Case Requirements
 - Emergency Response
 - Leak Repair
 - Third Party Damage
 - Leak Prone Pipe Replacement Programs
- Corrosion Control Work



Natural Gas Commodity Pricing (1997 - current)



Alternative forms of natural gas have use in certain scenarios



- Compressed Natural Gas (CNG)
 - Highly pressurized methane (~3,000 psig)
 - Compression shrinks the gaseous volume by a factor of approximately 100
 - The compressed state increases transportation efficiencies
 - For example, a flatbed CNG truck can transport several 20" diameter tubes containing gas
 - Used to offset insufficient pipeline supply during winter peak conditions (NYSEG, Mechanicville)





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NYSEG and RG&E: Company Overview

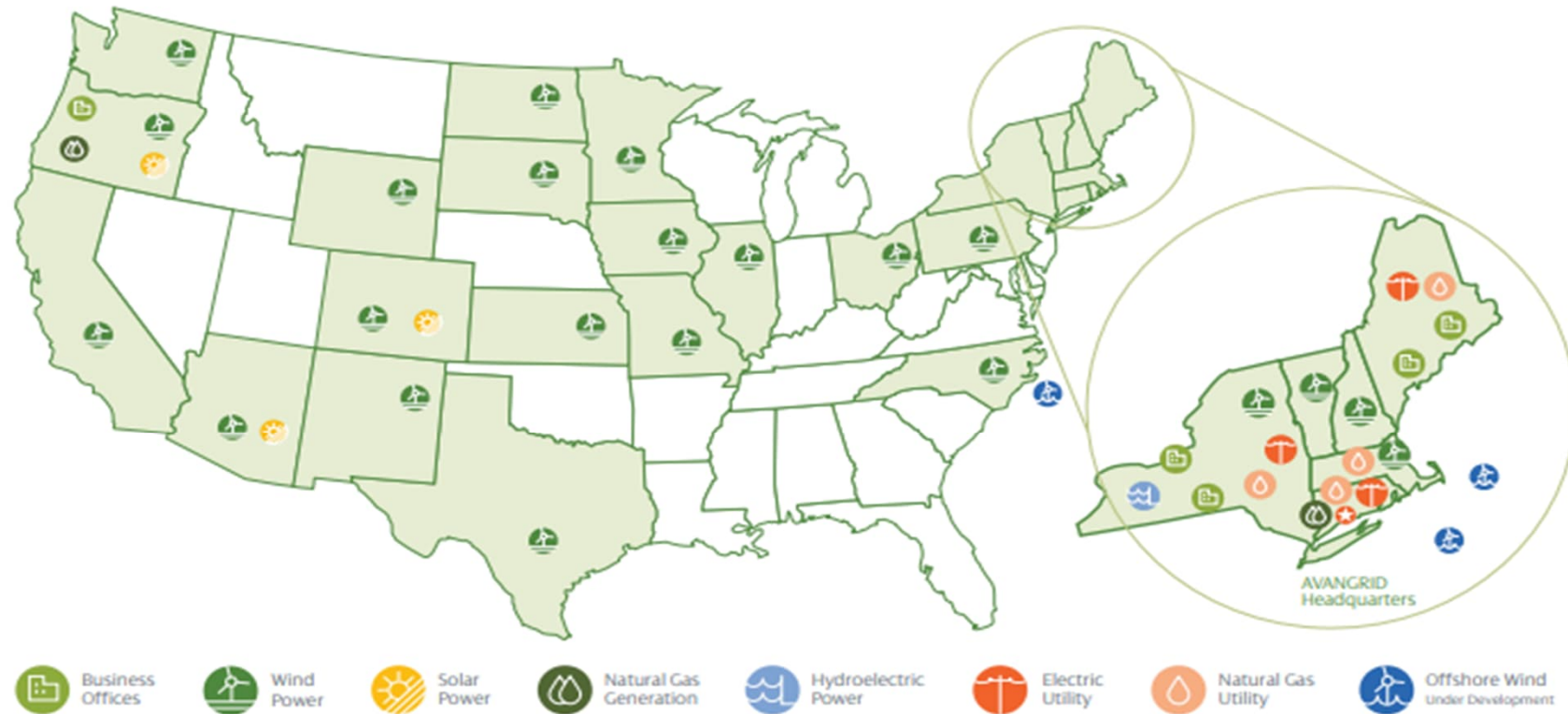
Anna Tiesi

Program Manager – NY President's Office



NYSEG and RG&E: Part of the Avangrid Family

AVANGRID is a leading sustainable energy company with 8 regulated electric and natural gas utilities and renewable generation assets in 24 states and is a member of the IBERDROLA Group. We are one of the cleanest utilities in the U.S., leading the nation's transformational change in how we generate and use energy through cutting edge generation and transmission technologies.



NYSEG Service Territory



The NYSEG Service Territory covers more than 40% of upstate New York.

Communities Served:

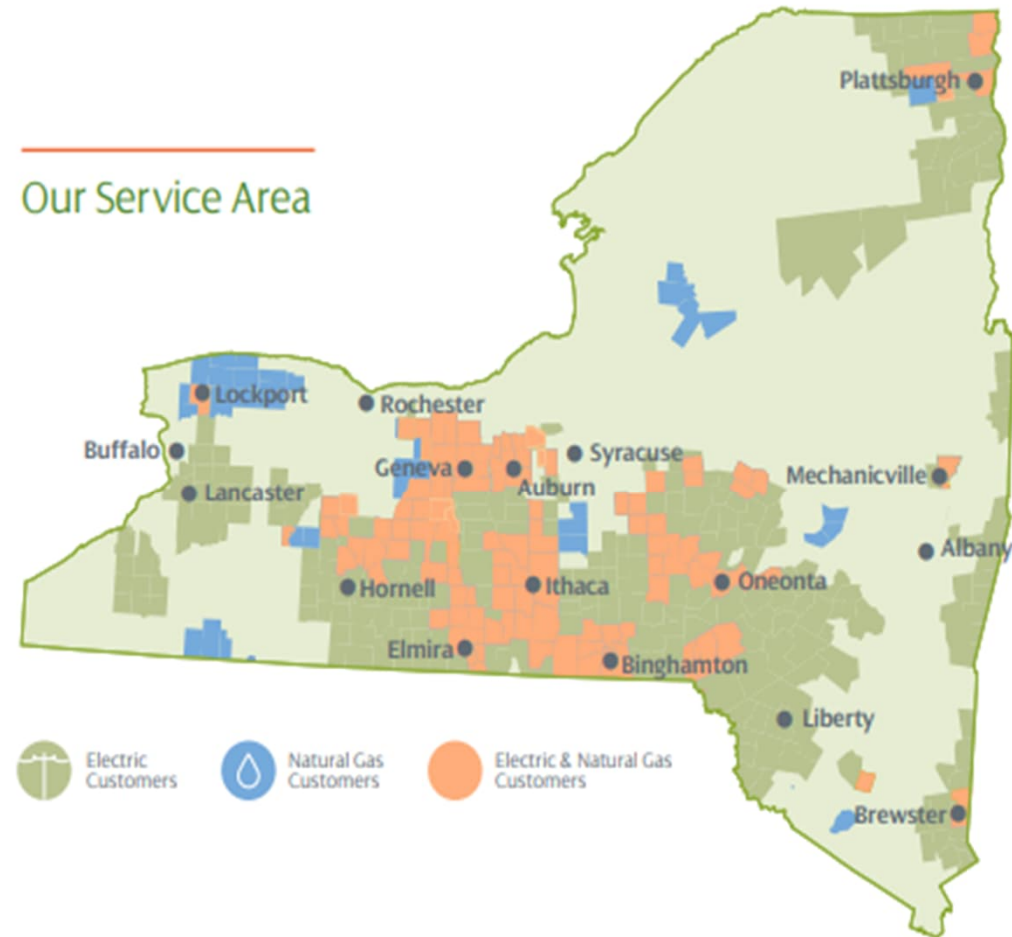
- 44 counties, 175 cities and villages, 410 towns

Electricity Service:

- Operates more than 35,000 miles of electric distribution lines and 4,500 miles of electric transmission
- Over 905,000 Electric Customers

Natural Gas Service:

- Operates more than 8,300 miles of natural gas distribution pipelines and 20 miles of gas transmission pipelines.
- Over 270,000 Natural Gas Customers



RG&E Service Territory



The RG&E Service Territory covers the city of Rochester and surrounding areas.

Communities Served:

- 9 counties, 23 cities and villages, 67 towns

Electricity Service:

- Operates more than 8,900 miles of electric distribution lines and 1,100 miles of electric transmission
- Over 388,000 Electric Customers

Natural Gas Service:

- Operates more than 8,600 miles of natural gas distribution pipelines and 98 miles of gas transmission pipelines.
- Over 323,000 Natural Gas Customers





3

Customer Demographics, Disadvantaged Communities

Erik Robie

Director – Customer Programs & Products

Mary Haskell

Manager - NYSEG/RGE Revenue Recovery – Customer Service



NYSEG and RG&E Are Committed to Equity

Achievement of societal equity objectives does not begin and end with requirements in the CLCPA. It is a key component of how NYSEG and RG&E approach our public service obligations.

- Disadvantaged communities (DACs) must not shoulder a disproportionate share of burdens, must have equitable access to benefits
- NYSEG and RG&E objectives:
 - Pursue equitable outcomes through meaningful engagement with the communities we serve
 - Outreach & Education
 - Our Customer Advocates work with a diverse set of organizations to understand community perspectives and needs, and to help customers pursue available resources and support
 - Direct 40% of clean energy benefits to DACs
 - Integrate equity considerations in capital/system planning processes, operational decision-making
- Customer engagement is a touchstone of our approach
 - Some communities have been historically under-represented in important discussions and decisions



Outreach and Education

- Since 2022, the Companies have participated in 56 low-income specific community events with approximately 5,000 attendees in total
- These events have distributed more than 6,000 natural gas kits to the communities and more than 22,000 LED bulbs.
- All kits, bulbs and events include collateral materials with instructions on how to sign up for the Empower program and AMEEP programs.
- In addition, the Companies launched the School Kits program in May. We are estimating about 2,000 school kits for NYSEG and 1,000 kits for RGE already distributed.
- Our plan is to invest \$1M this year in school kits totaling distribution of 20,000 kits by year end.
- There were 35 NYSEG and 13 RGE DAC/LMI schools that participated in the Schools program since May.



Team NY Customer Advocates is a team of 8 who serve as ambassadors to the customer, community, and the Company. This group provides our most vulnerable customers with a resource within the utilities to assist with their service needs. Through community partnerships we have been able to provide the customer with assistance beyond their service needs. The advocate's role is:

- Customer Advocacy for disadvantaged customers
- Liaison to community agencies and partners
- Promotion of special programs
- Outreach Events for customer
- HEFPA liaison for Emergency Service

Customer Advocates have participated in over 100 customer and agency outreach events in 2023. Providing access to assistance and program education to communities across the state.



Energy Assistance Program (EAP)

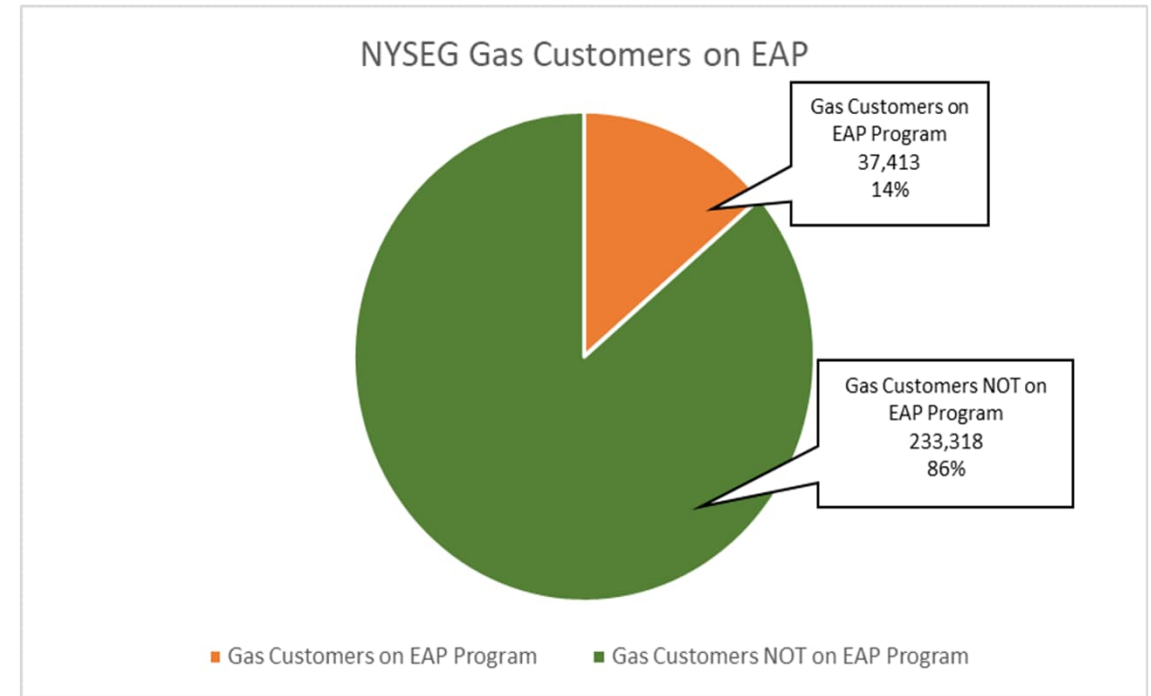
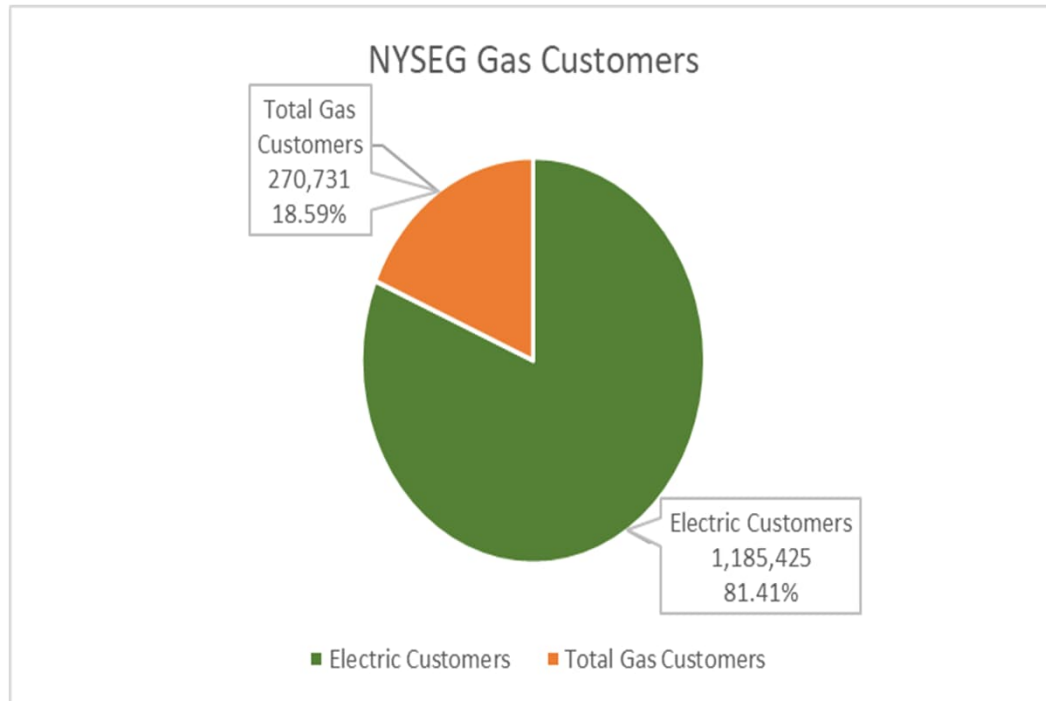
The Energy Assistance Program provides bill credits to enrolled low-income customers. A customer is automatically enrolled in the EAP program if a HEAP (Home Energy Assistance Program) payment is applied, if the account is on a matching file sent by OTDA (Office of Temporary and Disability Assistance), or the customer self-certifies with an application. The qualifying programs to self-certify are:

- Supplemental Security Income (SSI)
- Supplemental Nutrition Assistance Program (SNAP)
- Medicaid
- Federal Public Housing Assistance
- Veterans Pension and Survivor Benefits
- Bureau of Indian Affairs General Assistance
- Tribal Temporary Assistance for Needy Families (TANF)
- Food Distribution Program on Indian Reservations
- Tribal Lands Head Start

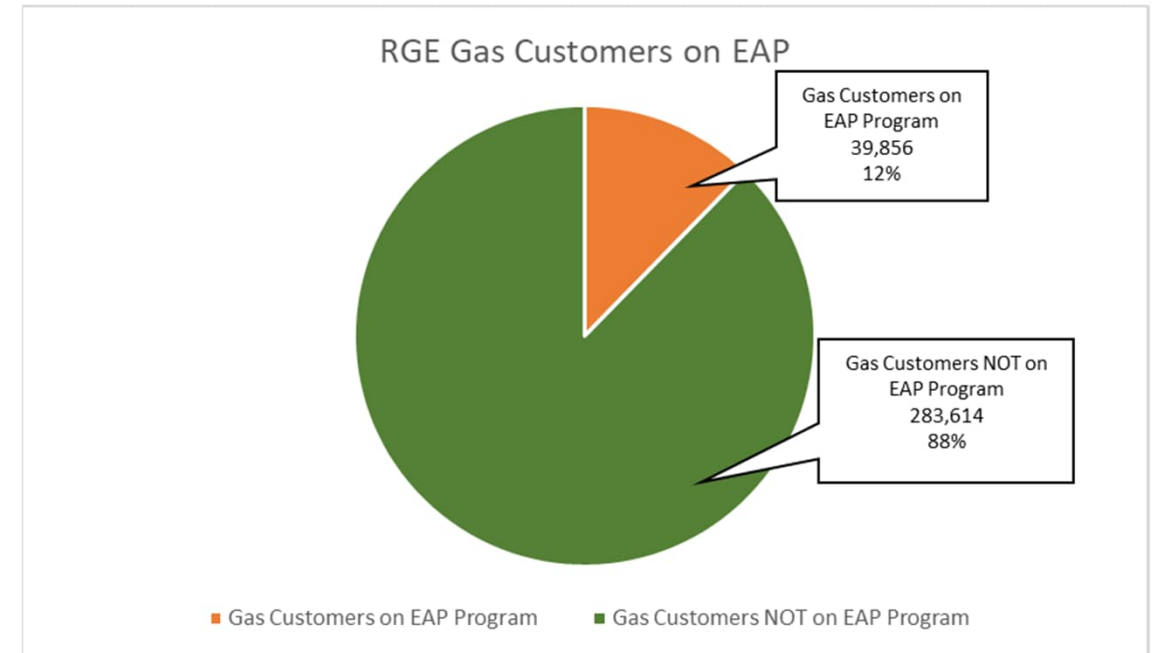
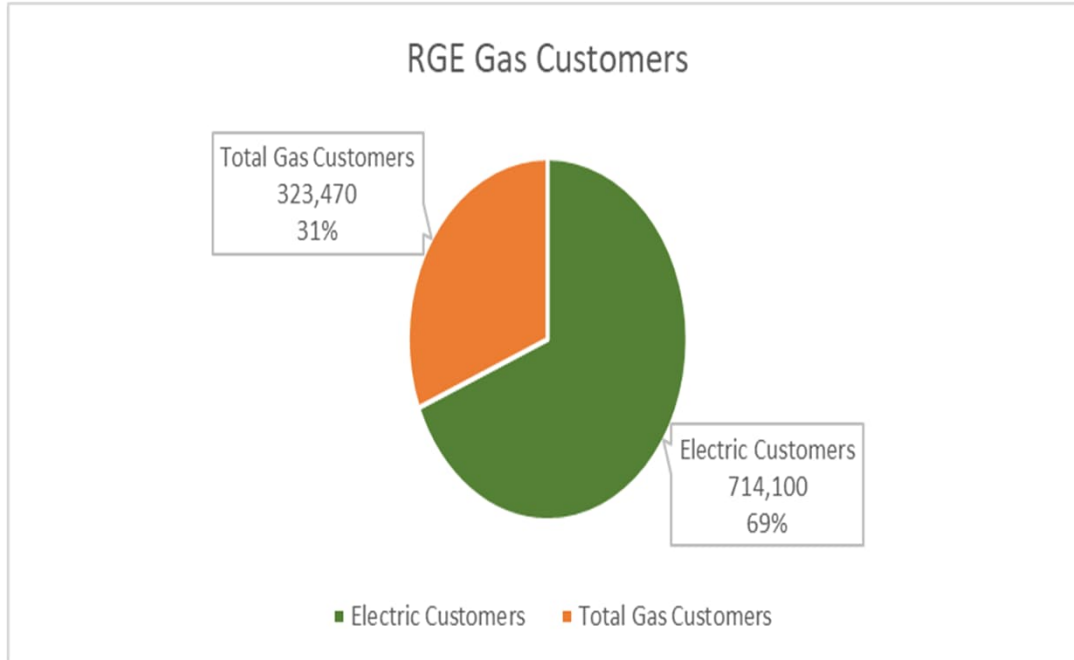
Customers must receive HEAP, be included in the file match, or self-certify every year to continue receiving EAP bill credits.



NYSEG - Energy Assistance Program Counts for Gas Customers



RGE - Energy Assistance Program Counts for Gas Customers





Electric and Gas Bill Relief Program Phase 1 and Phase 2

- Electric and Gas Bill Relief Program Phase 1 provided bill credits to low-income customers that had arrears prior to May 1, 2022. NYSEG received \$5.8M and RG&E received \$9.5M in COVID relief funds from the state to offset the cost of the program. Total spend:
 - NYSEG: \$25.6M, 38,205 customers
 - RG&E: \$33M, 33,641 customers
- Electric and Gas Bill Relief Program Phase 2 provided 'up to' credits to non-low-income residential customers and small commercial customers with arrears prior to May 1, 2022.
 - NYSEG Small Commercial up to credit amount \$1,250, total spend: \$1.4M, 1,873 customers
 - NYSEG Residential customers up to credit amount \$1,000, total spend: \$16.8M, 28,954 customers
 - RGE Small Commercial up to credit amount \$1,500, total spend: \$.6M, 646 customers
 - RGE Residential customers up to credit amount \$1,500, total spend: \$15.2M, 17,087 customers



Low Income Self Certification and Outreach

- Customers are eligible to self-certify for NYSEG and RG&E low-income program discounts. Applications are available upon request or on company websites. Upon receipt of application and acceptable documentation, a customer is enrolled and receives monthly discounts. Customers are required to self-certify every year. The Companies send renewal reminders.
- The Companies participate in multiple outreach events throughout the year and provide brochures, flyers and other items to customers.
- Outbound calling and email campaigns are utilized to encourage customers to apply for HEAP and remind customers the Companies have assistance available to help with bills.
- Special email and mail campaigns have been completed within the last year regarding the Emergency Rental Assistance Program and the Electric and Gas Bill Relief Phase 1 and Phase 2 Programs.
- The Companies will partner with organizations that service Seniors (such as NYS Office of Aging and AARP) to identify opportunities to better reach this vulnerable population
- The Companies promote low-income program in Energylines, company websites, social media, mobile apps, and community outreach events with human services organizations, community leaders, stakeholders and agencies.



4

Demand Forecasting, Gas Supply, Procurement, Transportation, and Storage

Mike Purtell

Director – Regulatory & Tariffs

Marcella Gaetani

Manager – Gas Supply



NYSEG/RG&E Gas
Sales Forecast



Forecast of Natural Gas Customers and Sales Units (therms)

Residential	Customers = Households * Use-per-Cust (therms) = price, weather, trend
Commercial	Customers = Exponential Smoothing Units (therms) = economic driver, price, weather
Industrial	Customers = Exponential Smoothing Units (therms) = economic driver, price, weather

* economic variables from Moody's

Five Year Forecasts developed for:
Internal Plan/Budget, Reporting and Analysis, Rate Cases, Supply Planning



Multi-Variable Linear Regression Model

$$Y = B_0 + B_1X_1 + B_2X_2 + e$$

Where:

- Y = the variable to be explained (customer, Dth, Use-per-Customer)
- X_i = explanatory variables (price, weather, trend, etc.)
- B_0 = constant Term (*the Y-axis intercept, when $X=0$*)
- B_1 = coefficient of X_1 (*e.g. relationship between X_1 and Y*)
- e = error term OR residual



Planning: Serving Peak Demand

Design Day Forecasting

- Annual Planning – Relationship between actual load and weather experienced.
- Design Day Heating Degree Day is based on the coldest temperature experienced over last 40 years.

Firm Transportation & Storage Capacity

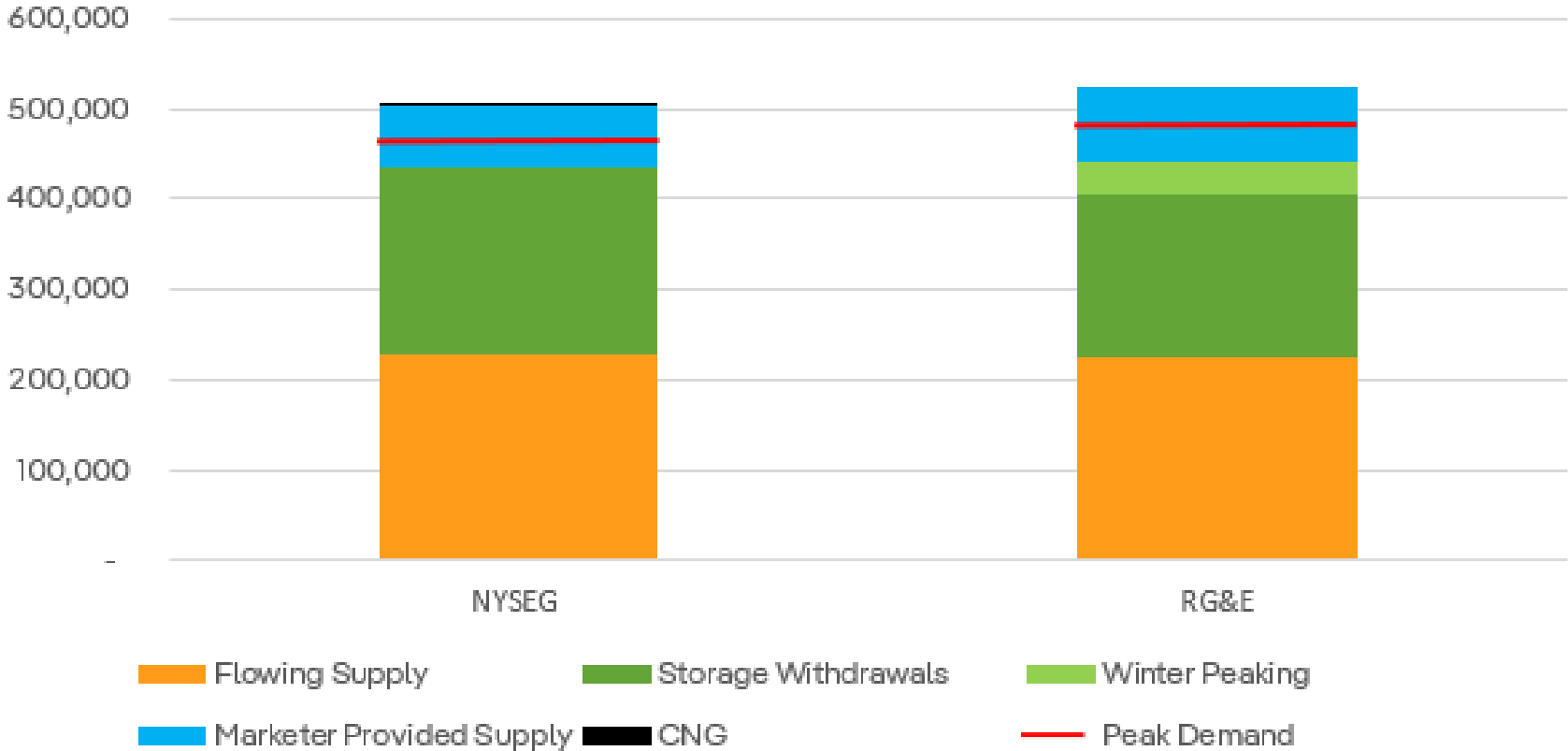
- NYSEG and RG&E portfolios managed separately
- Contract to serve up to Design Day
- Company commodity customers, mass-market customers taking supply service from a marketer, balancing services, back up service

Commodity Purchasing

- NYSEG and RG&E portfolios managed separately
- NYSEG and RG&E commodity customers, balancing services
- Storage injections/withdrawals



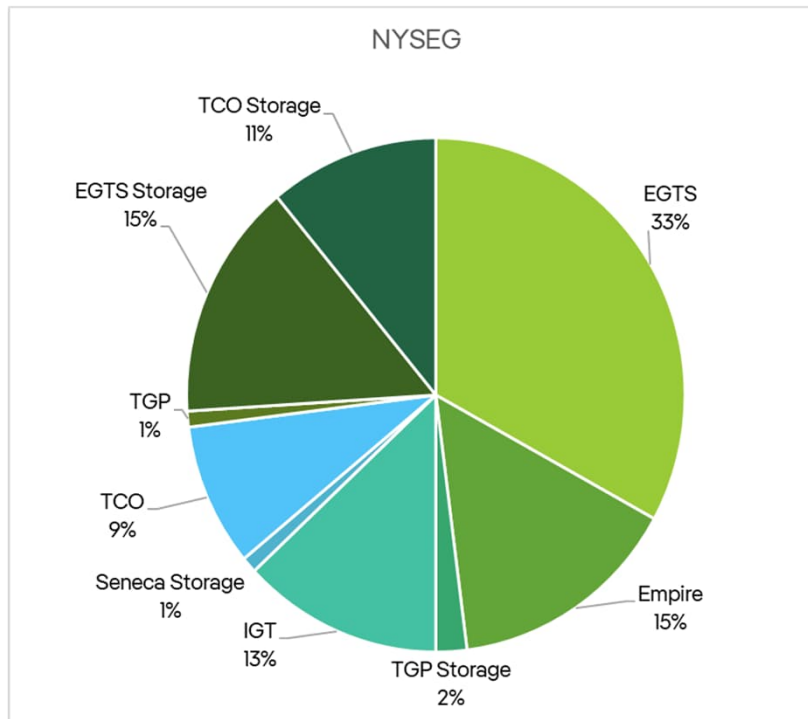
Winter 2022-23 Peak Demand Requirements



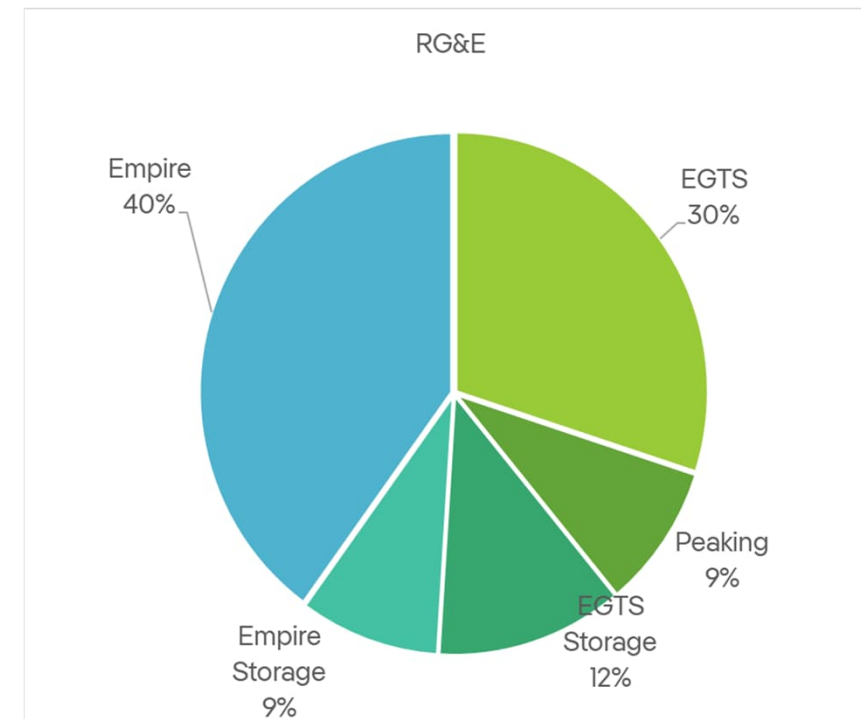


Planning: Serving Peak Demand

- Firm Pipeline Transportation Capacity
 - Eastern Gas Transmission and Storage – NYSEG and RG&E
 - Empire State Pipeline – NYSEG and RG&E
 - Columbia Gas Transmission – NYSEG
 - Tennessee Gas Pipeline – NYSEG
 - North Country Pipeline – NYSEG
 - Iroquois Gas Transmission – NYSEG
 - Algonquin Gas Transmission – NYSEG

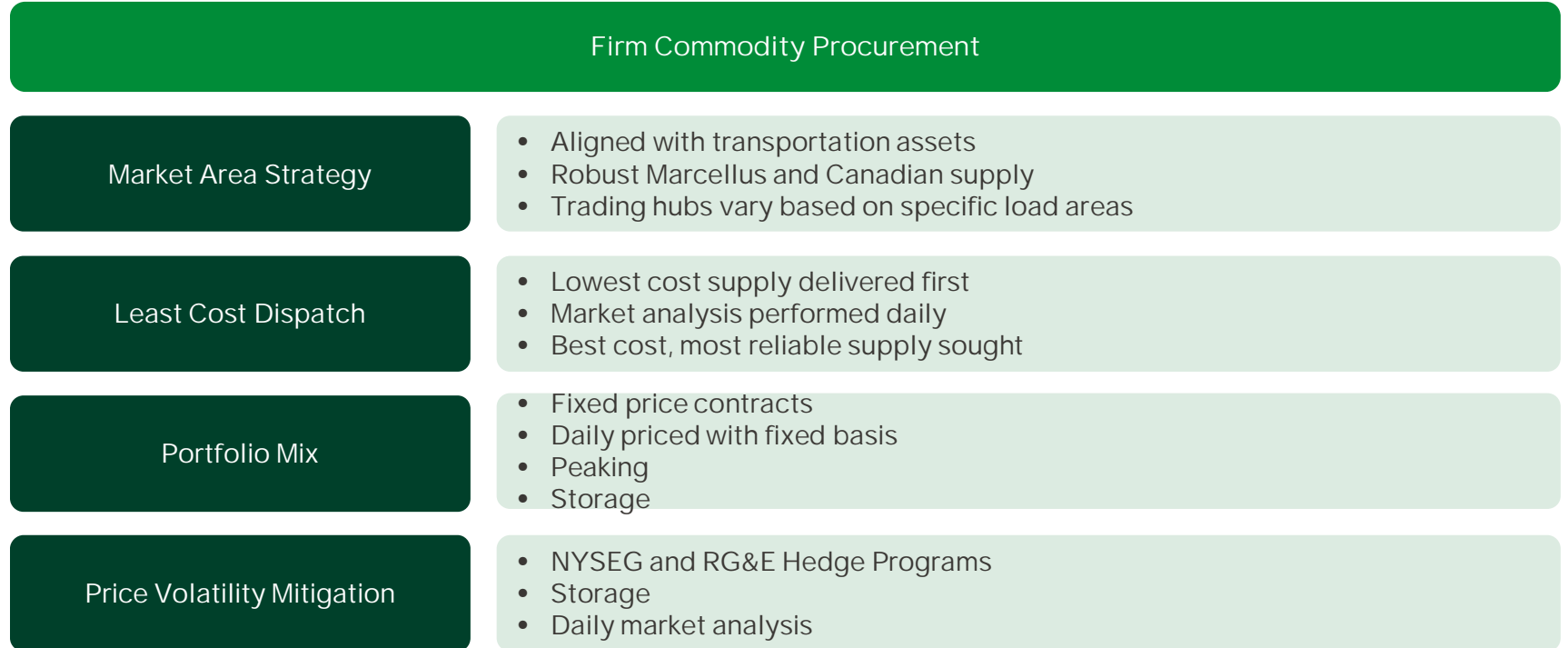


- Firm Storage Capacity and Transportation Service
 - Eastern Gas Transmission and Storage – NYSEG and RG&E
 - Columbia Gas Transmission – NYSEG
 - Tennessee Gas Pipeline – NYSEG
 - Arlington Storage Company – NYSEG
 - Empire State Pipeline – RG&E





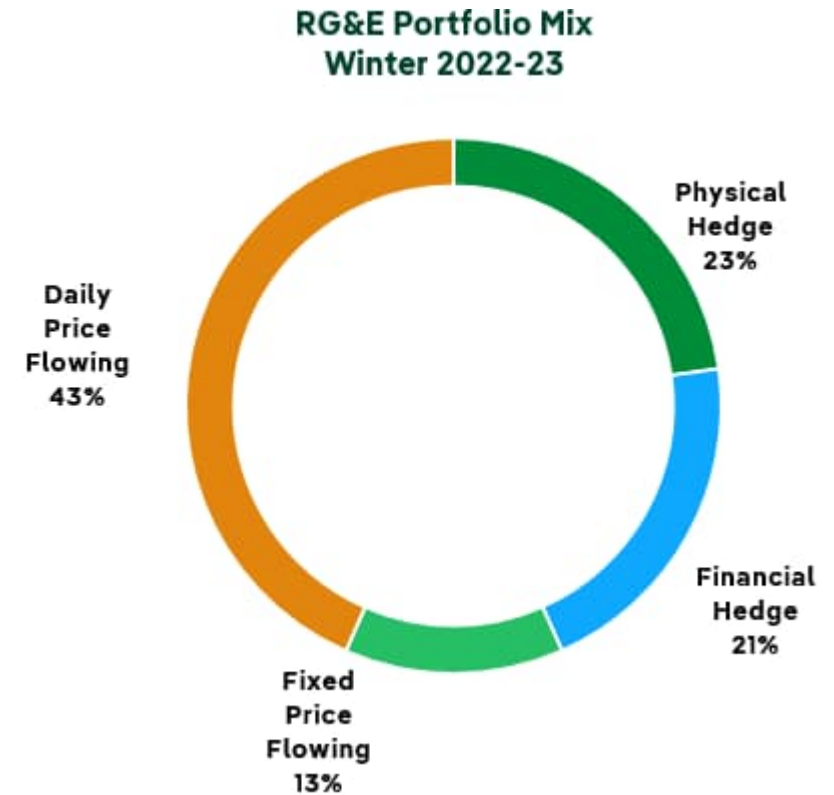
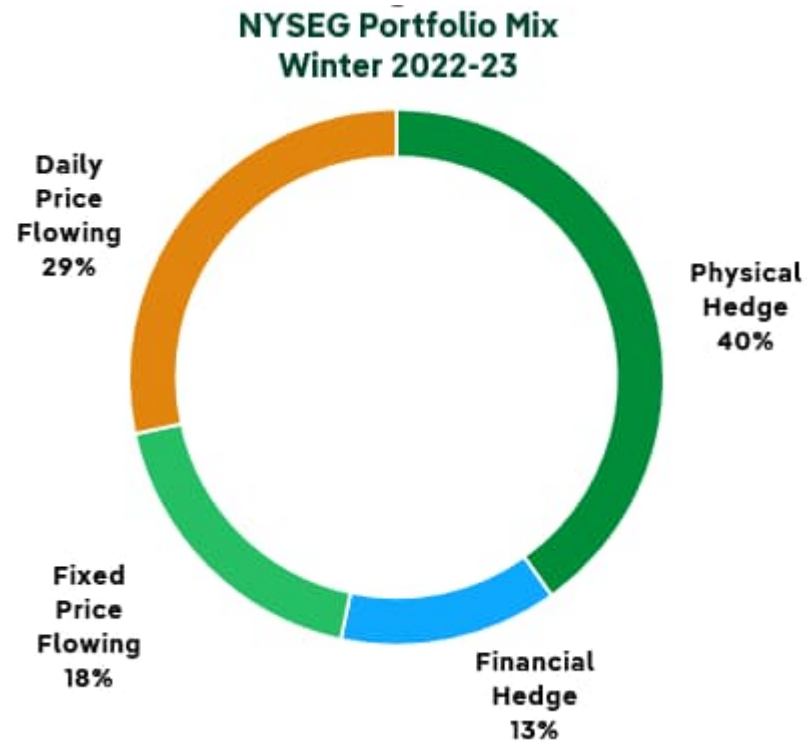
Best Cost Approach to Supply Procurement





Volatility Mitigation

- The Companies hedge 50 – 60% of firm winter requirements each year
 - Storage Injections in the summer are delivered to city gate stations in winter
 - Financial futures





Renewable Natural Gas (RNG)

- Biogas from dairy farms, landfills, wastewater, or food waste that is captured and turned into pipeline quality gas
- NYSEG has two active RNG facilities directly interconnected to the distribution system
- Two more projects are underway, both NYSEG
- Receive frequent inquiries from developers looking to interconnect
- The Companies consider RNG gas to be local production
 - Non-firm supply
 - Environmental attributes
 - The Companies do not purchase
- RNG pools
- Trucked RNG



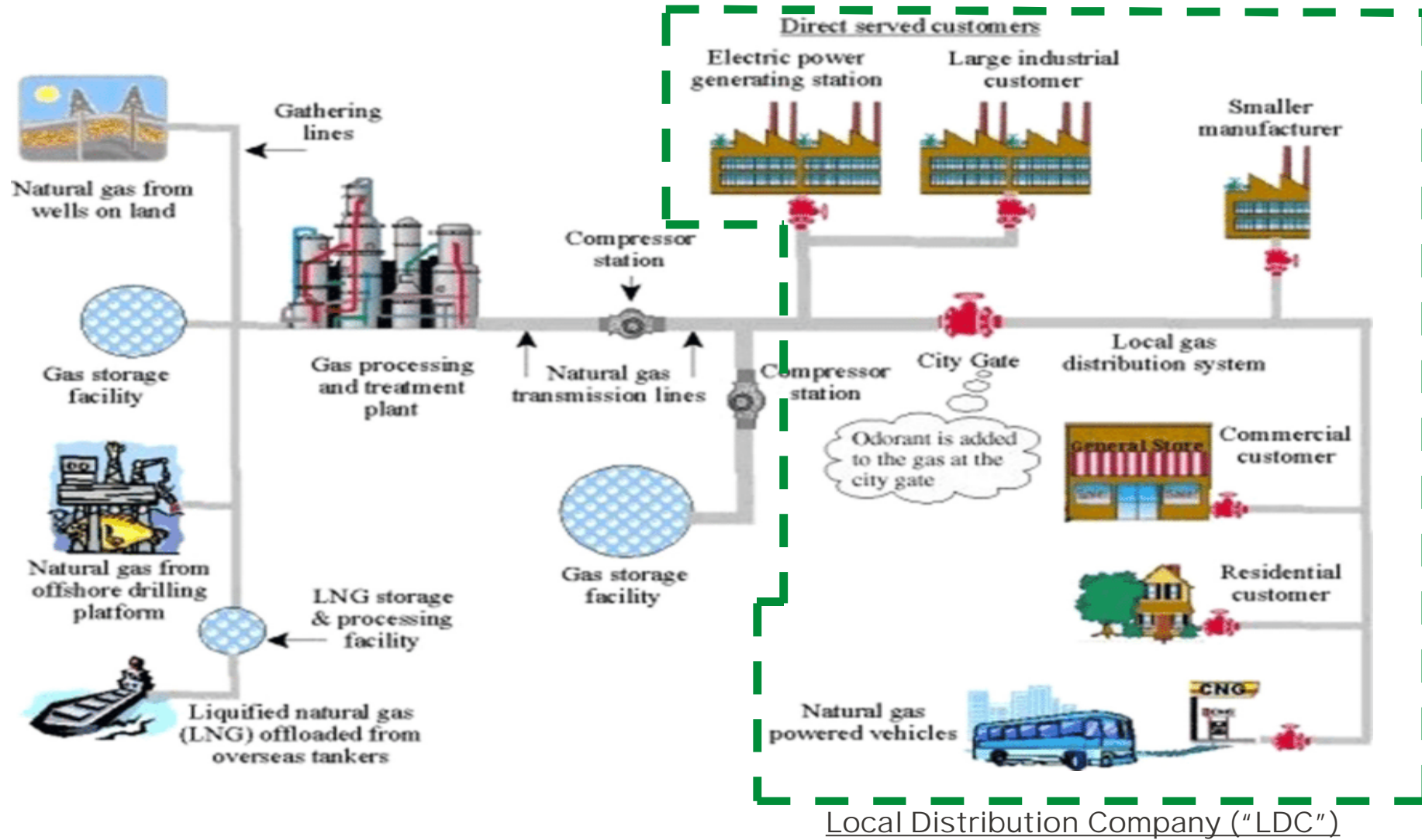
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Gas Distribution System Engineering and Operations

Brian Jacobs

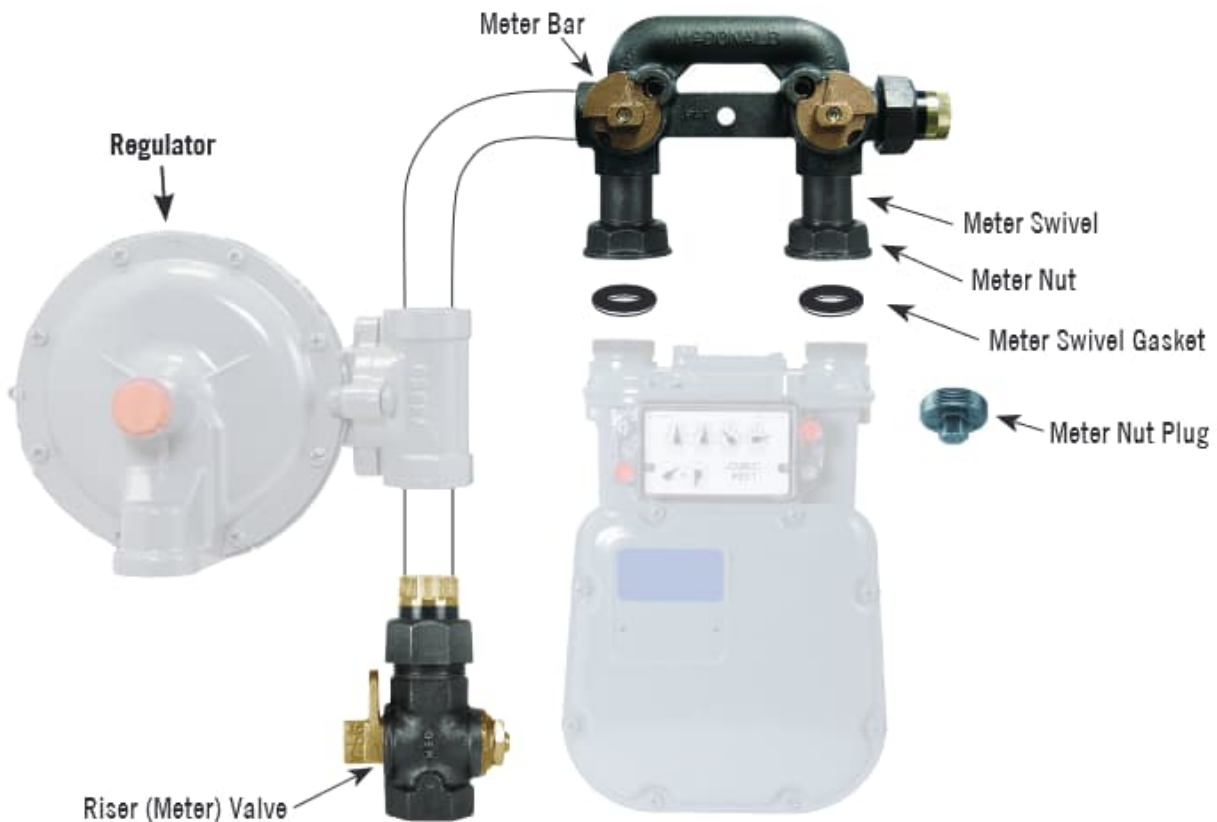
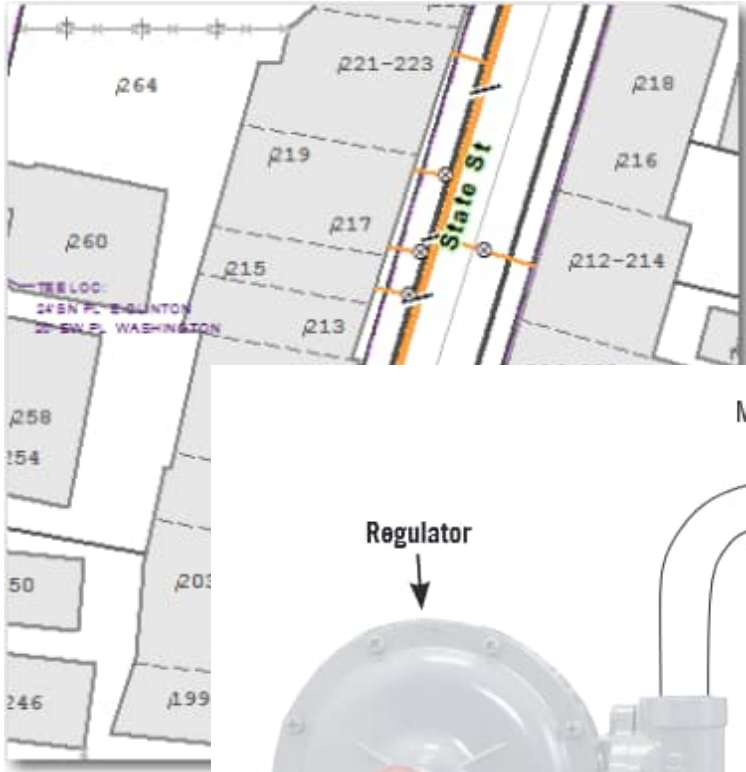
Senior Manager – Gas System Planning NY

The Natural Gas Value Chain





What Makes up the System on your Street?



Transmission & Distribution Systems



	NYSEG	RG&E	Total
Miles of Transmission Main	20.43	98.78	119.21
Miles of Distribution Main	4,866	4,947	9,813
Number of Gas Services	250,781	286,532	537,313
Number of Point of Delivery Stations	68	13	81
Number of District Regulator Stations	383	227	610
Number of Local Production & RNG facilities.	3	1	4

Gas Engineering & Operations Initiatives



Initiative	Safety	Reliability	GHG Reductions	Modernization & Efficiency
Emergency Response	●	●	●	
Damage Prevention & Public Awareness Programs	●	●	●	●
Leak Survey & Detection Programs	●	●	●	●
Leak Prone Main Replacement	●	●	●	●
Regulator Station Resiliency	●	●	●	●
Public First Responder Training	●			
Residential Methane Detectors	●		●	●
Meter In-to-Out Program*	●	●		●

*Subject to Joint Proposal Approval



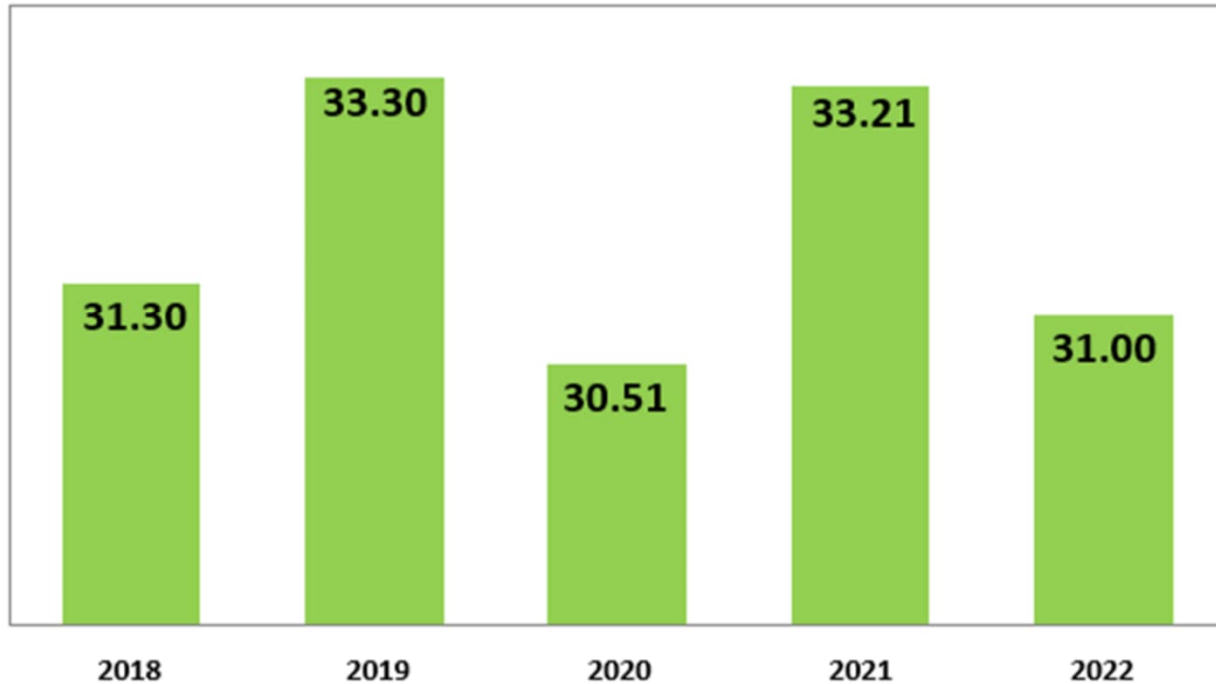
Leak Prone Main Replacement

- Annual segment prioritization and replacement
- Prioritization based on risk factors including:
 - Leakage, 3rd party damage, structure proximity, corrosion history, material type, construction records
- Annual review for active corrosion
 - Replacement in accordance with 16NYCRR Part 255.483
- Ad-hoc segment prioritization for emergent risks
 - Municipal construction projects (potential increased risk due to 3rd party damage/interferences)
- No remaining cast iron in NYSEG and RG&E systems

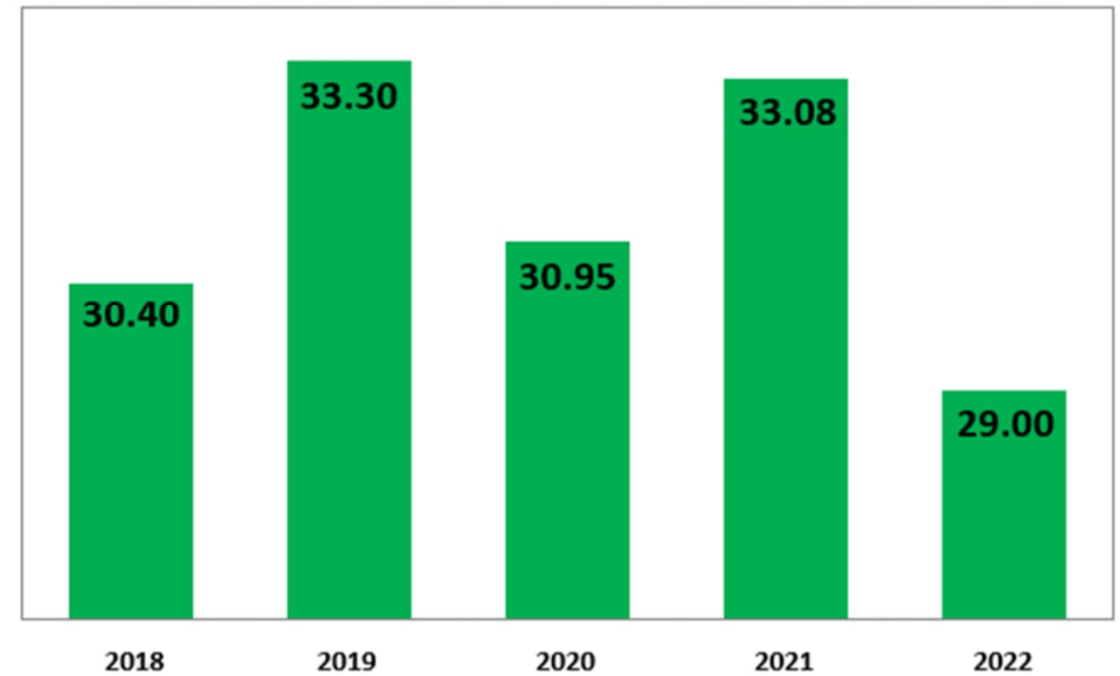
Leak Prone Main Replacement - Modernization



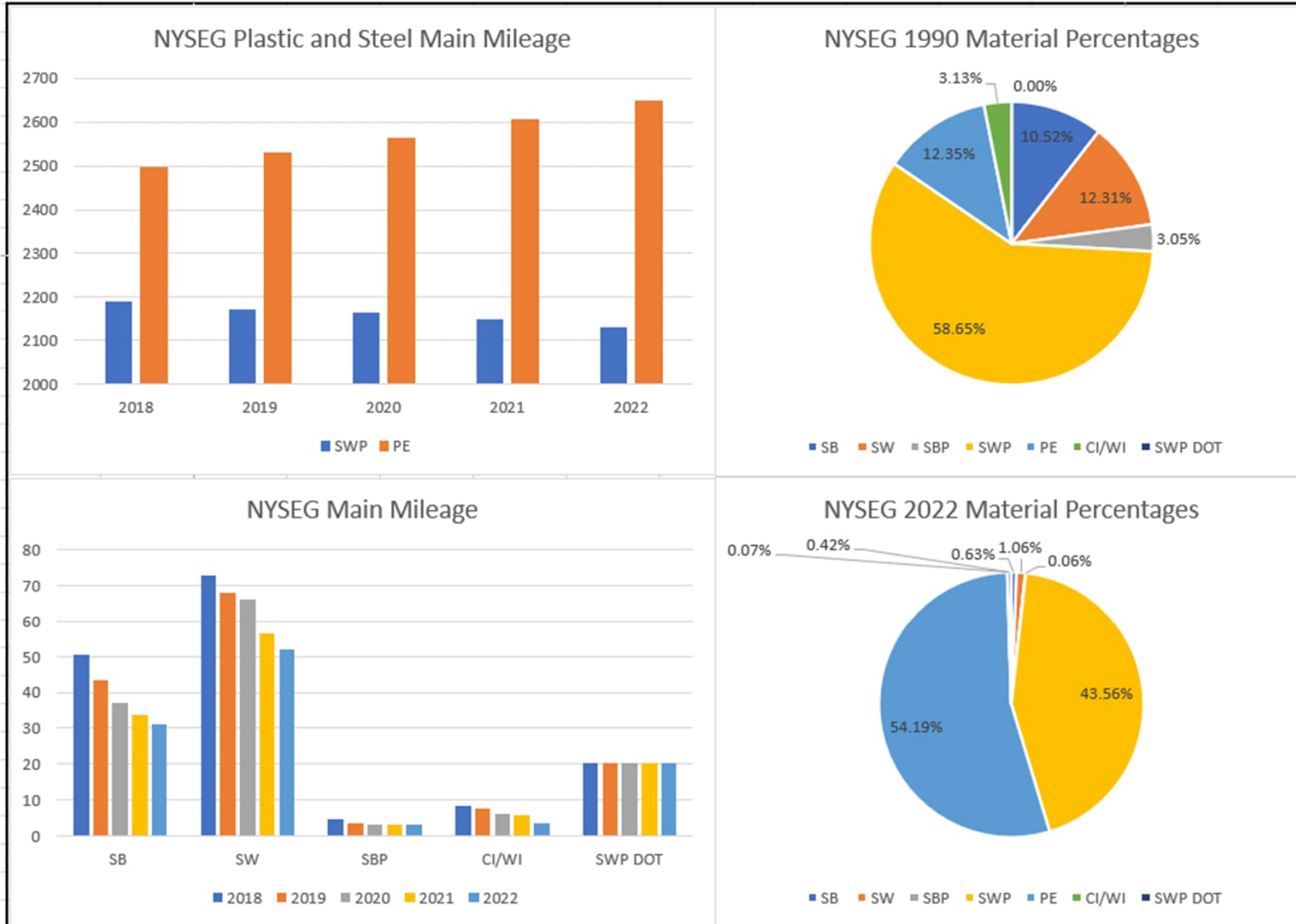
Annual Miles of Leak Prone Main Replaced (NYSEG)



Annual Miles of Leak Prone Main Replaced (RG&E)

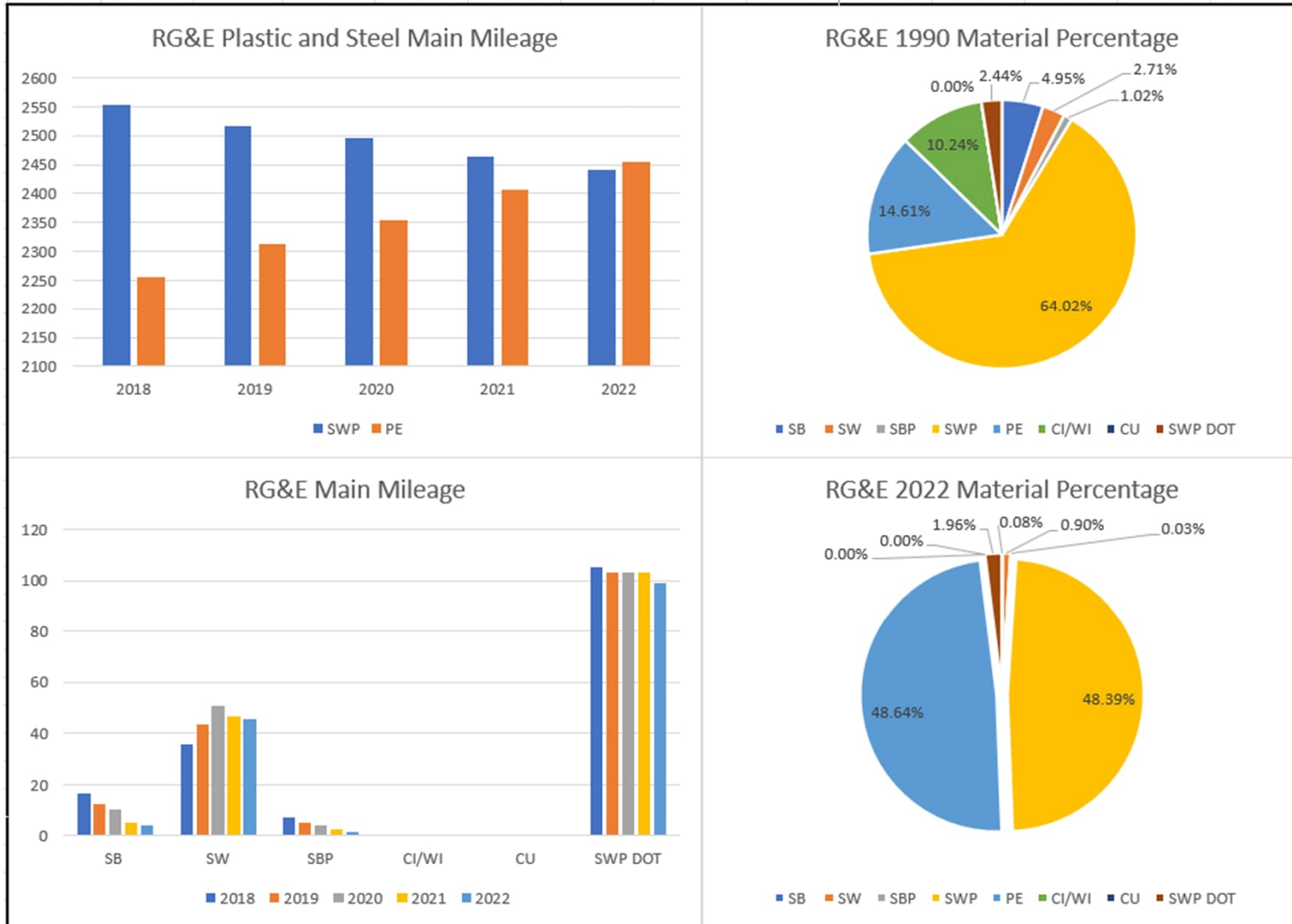


NYSEG System Material Trends



- SB – Steel/Bare
- SW – Steel Wrapped (no CP)
- SWP – Steel Wrapped Protected
- CI/WI – Cast Iron/Wrought Iron
- SWP DOT - Steel Wrapped Protected DOT Transmission
- PE -Polyethylene

RG&E System Material Trends



- SB – Steel/Bare
- SW – Steel Wrapped (no CP)
- SWP – Steel Wrapped Protected
- CI/WI – Cast Iron/Wrought Iron
- SWP DOT - Steel Wrapped Protected DOT Transmission
- PE – Polyethylene
- CU - Copper



Transmission Integrity Management Program

- IM Program in compliance with 49 CFR Part 192
- Established plan regarding PHMSA Mega Rule incorporation
- In-Line Inspection Program for DOT Transmission and NYS HP Distribution (>125 PSIG MAOP)
- External Corrosion Direct Assessment for non-piggable pipelines
- 100% remediation of excavated anomalies



System Planning Process & Methodology

- Network Analysis
 - Build, Calibrate & Validate Hydraulic Models of our Gas Networks (Synergi)
 - Collect and calibrate against hundreds of pressure and flow data points
 - Utilize System Hydraulic Models to identify system vulnerabilities
 - **Maximum Allowable Operating Pressure (MAOP) as measure of system reliability**

> 70% MAOP	Healthy System. No imminent concerns.
70% - 50% MAOP	Reliability Concern. Start to identify potential traditional solution projects.
< 50% MAOP	Reliability Risk. Limited ability to serve new load, increase risk of service to existing customers. Traditional and/or Non-traditional solution must be implemented.



Town of Lansing Moratorium

- Background
- Planning began for Dryden/Freeville Reinforcement Project in 2013
 - Tompkins County community opposition
- Moratorium on new Gas Service Issued in 2017
 - Micro-compressors Study
 - Non-Pipeline Alternative RFP
- Community Engagement
- Effects of East Lake Road Reinforcement
- Current Status of Moratorium



Leak Detection and Repair

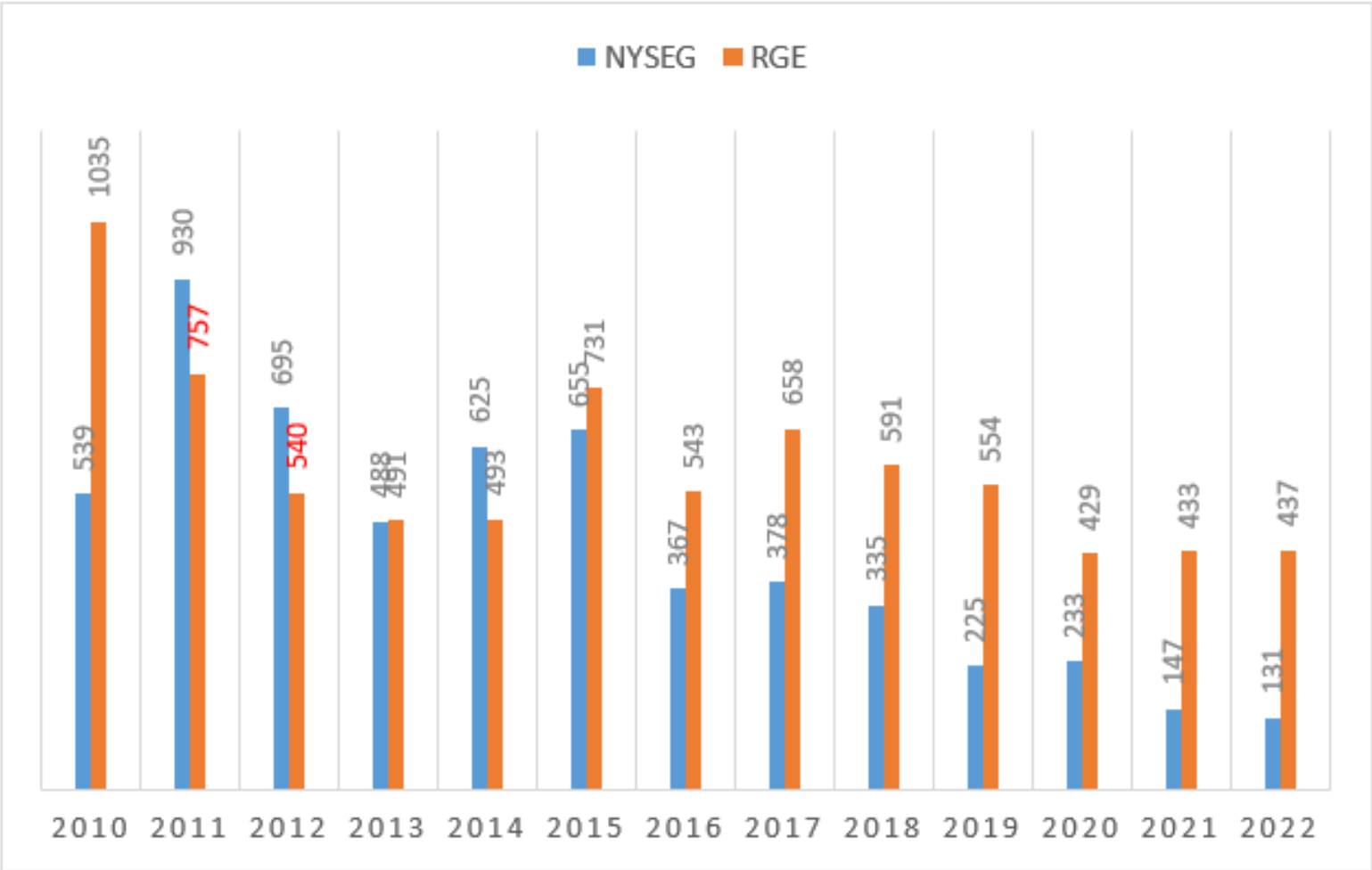
Leak Detection Practices

- Mandated Surveys
 - Mains/services
 - Bridge Crossings
 - Inside Service Lines
- Non-mandated Surveys (beyond code requirements)
 - Mains/services
- Residential Methane Detectors
- Emerging Technologies - Advanced Mobile Leak Detection, Satellite Methane Emission Detection

Leak Detection and Repair



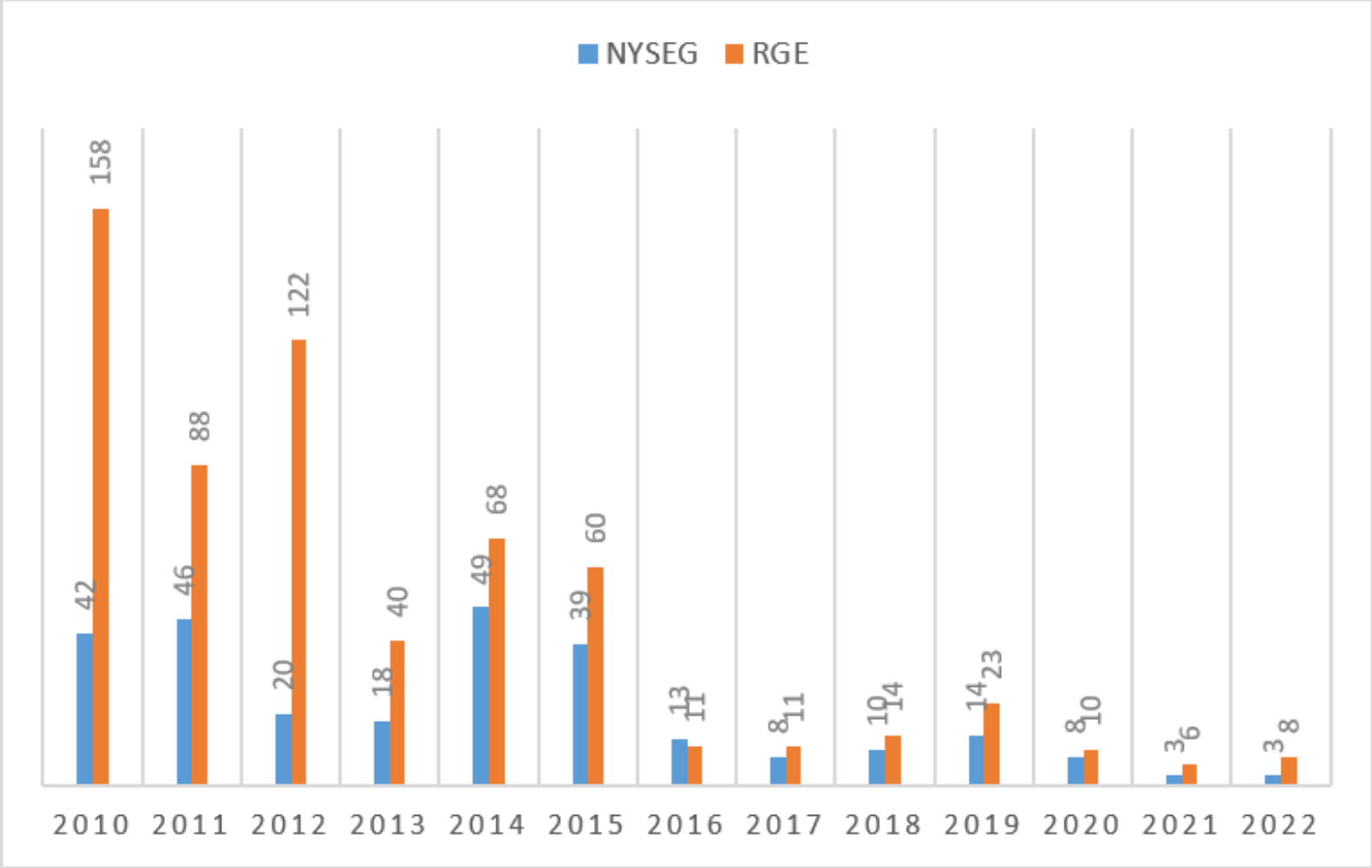
Leak Discoveries



Estimated



Leak Backlog at Year end





Third Party Damage Mitigation

Damage Prevention Programs

- UDIGNY
- Damage Prevention Vehicles (DVP) Program

Public Awareness Programs

- Advertising – radio, billboards, vehicle wraps
- Town Hall Meetings
- Contractor Meet and Greets



6

Utility Emissions

Suzanne Snowden

Manager – Environmental Health and Safety



Greenhouse Gas (GHG) Emissions Classification

Greenhouse Gas (GHG) emissions are placed into three (3) classifications: Scope 1, Scope 2 and Scope 3. These classifications are identified by the U.S. Environmental Protection Agency (USEPA) and annual reporting of GHG emissions (GHG Emissions Reporting Program (GHGRP)) as well as improvements to reduce GHG emissions all utilize the Scope 1, 2 and 3 classifications:

Scope 1

Direct Emissions from Company owned and controlled resources such as:
Mains and Services (Pipes), Metering and Regulator Stations, Combustion Units (heaters, etc.), Fleet Vehicles (gasoline, diesel, NG, etc.)

Scope 2

Indirect Emissions released from combustion of “purchased” electricity such as:
Business Offices, Measuring and Regulator Stations, Corrosion Systems

Scope 3

Indirect Emissions from non-company owned “upstream and downstream” entities such as:
Production and Transmission of NG, Customer Usage/Combustion of NG, Employee Commuting and Business Travel



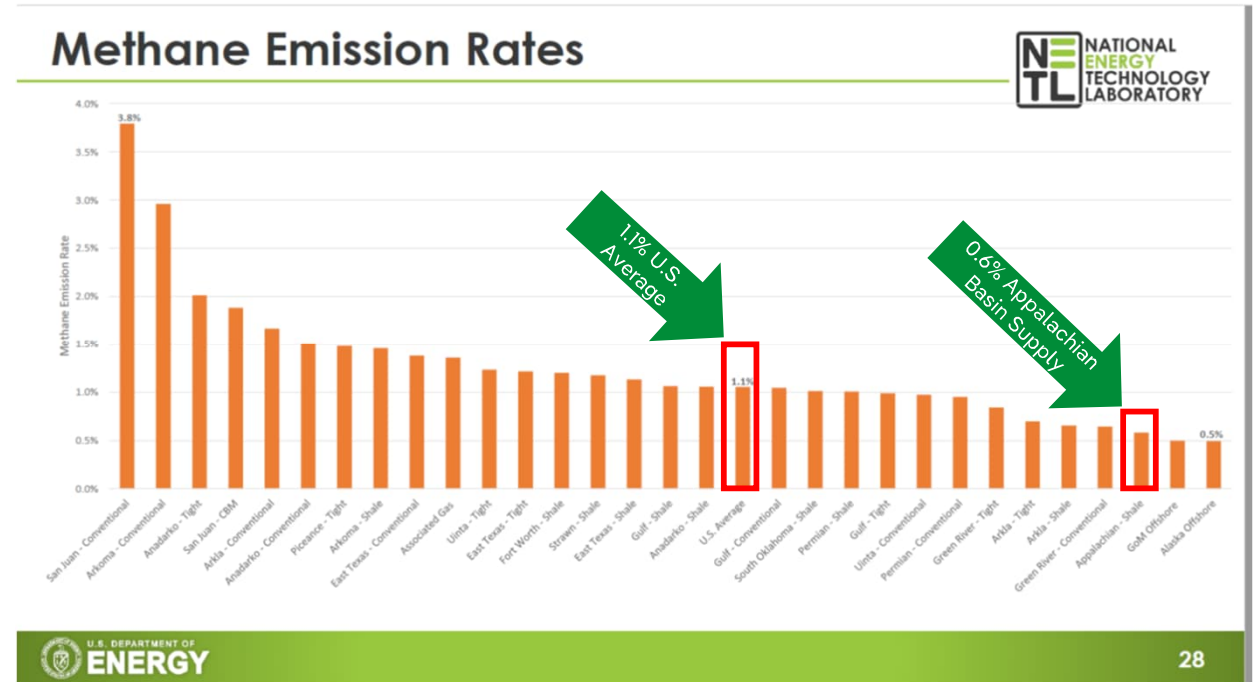
Types of Natural Gas

Three types of NG:

- 1) Known point of origin/nomination point,
- 2) Certified gas, and
- 3) Undifferentiated gas - no known point of origin/nomination point or pedigree of where it was inserted into the NG transmission system.

The US Department of Energy's National Energy Technology Laboratory (NETL) provides a chart of Scope 3 upstream CH₄ emissions rates from NG supplies in the US.

The Northeast purchases from the Appalachian production basin supply, that has one of the lowest emission rates in the US.





Annual GHG Emissions Inventory Reporting

- USEPA's Greenhouse Gas Reporting Program (GRGRP)
- Greenhouse Gas Inventory (GHGI)
- The Natural Gas (NG) industry report GHG emissions annually
- CO₂e = CO₂, CH₄ (methane) and N₂O (nitrous oxide)
- GHGI EF's reflect improvements in leak detection and leak management more than GHGRP
- GHGI is a national estimate of GHG emissions prepared annually by USEPA and submitted to the United Nation's (UN)

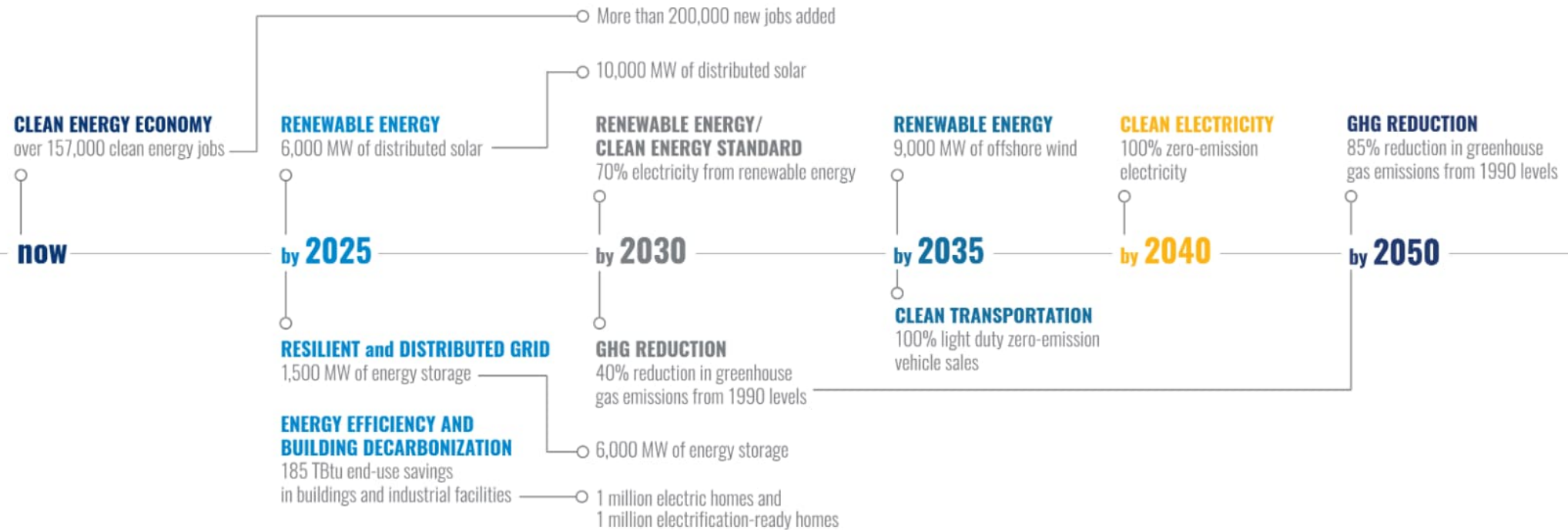
[GHG Emission Factors Hub | US EPA](#)





NY CLCPA Order – GHG Emissions Inventory Reporting

New York's Nation-Leading Climate Targets



We Are New York. We Power the Future.



What's being proposed and how is it different?

- Will use yet modify the Natural Gas Sustainability Initiative (NGSI) base methodology to be consistent with CLCPA and DEC Statewide Inventory
- Global Warming Potential (GWP) over a 20-year time period reporting CO₂, CH₄ and NO₂
- Emissions factors (EF's) from NGSI vs GHG Reporting Program (GHGRP)
- Modify NGSI reporting template to meet CLCPA Order requirements
- Be more comprehensive and flexible
- Reflect current research and most up-to-date data from industry standards and accredited organizations
- Continue to be scientifically valid
- Report on proactive efforts by JU companies (i.e.; proactive utility investments, operational performance, leak mitigation, infrastructure replacement)
- Improved technology and precision (e.g.; Renewable Fuels, USEPA Methane Challenge participation, etc.)
- Continuously evaluate emissions reductions and avoidance opportunities across NG value chain



Current Status of JU and DPS Effort

- ✓ Draft emissions inventory reporting proposal by JU
 - Submitted 12/1/2022 – Case 22-M-0149
- ✓ Supplement to Draft emissions inventory reporting proposal by JU
 - Submitted 5/31/23

Copies of the initial draft proposal and supplement to the proposal can be found at the NY State DPS website as well as all filed comments to date:

- [Greenhouse Gas Inventory: PSC seeks comment on Greenhouse Gas Emissions Inventory Report filed by the joint utilities | Department of Public Service \(ny.gov\)](#)
- [NYSDPS-DMM: Matter Master](#)



7

Decarbonization Efforts

Erik Robie

Director – Customer Programs & Products

Katherine Huette

Lead Analyst – Non-Wires Alternatives



MAJOR FOCUS ON CLEAN ENERGY

New York State **Clean Energy Goals**

CLCPA
Climate Leadership Community
Protection Act

Governor's Office
State of the State 2023
2 Million Climate Friendly Home by 2030

NY PSC **Orders**

January 2020
NENY order comes out
Starts new, higher EE savings goals and the
NY Clean Heat and LMI programs

In Progress
NENY Interim Review
Assessing progress to targets for all utilities

Energy Efficiency Supporting NY Climate Policy



PROGRAMS IN OUR PORTFOLIO

Three Programs:

- | Commercial & Industrial Rebate
- | Small Business Direct Install
- | Small Business Customer Choice
- | MORE COMING SOON!

Commercial & Industrial

Residential

Eight Programs:

- | Appliance Recycling
- | Smart Solutions- Online Marketplace
- | Behavior programs
- | Residential Rebates
- | Retail Products
- | Multifamily Program
- | Behavioral Program
- | Low Income Dist. (food banks, schools, community events)



Statewide Program

- | Heat Pumps for all sectors:
- | Commercial
- | Residential
- | Custom

NY Clean Heat

NY Energy Efficiency

LMI Programs

Statewide Programs

- | Residential LMI Program
- | Multifamily LMI: The Affordable Multifamily Energy Efficiency Program



EV PROGRAMS TO ACCELERATE ELECTIFICATION OF NY





Non-Pipes Alternative Program

A Non-Pipes Alternative (NPA) deploys cost-effective utility or third-party solutions to defer or avoid traditional natural gas capital infrastructure projects needed to address system needs.

NPA Examples:

Supply Side Solutions	Demand Side Solutions
Renewable natural gas	Heat pumps / beneficial electrification
Hydrogen	Fuel switching
Compressed and liquified natural gas	Thermal storage
	Targeted energy efficiency
	Targeted demand response
	Heat recovery systems
	Combined heat and power technology

NPAs Support:

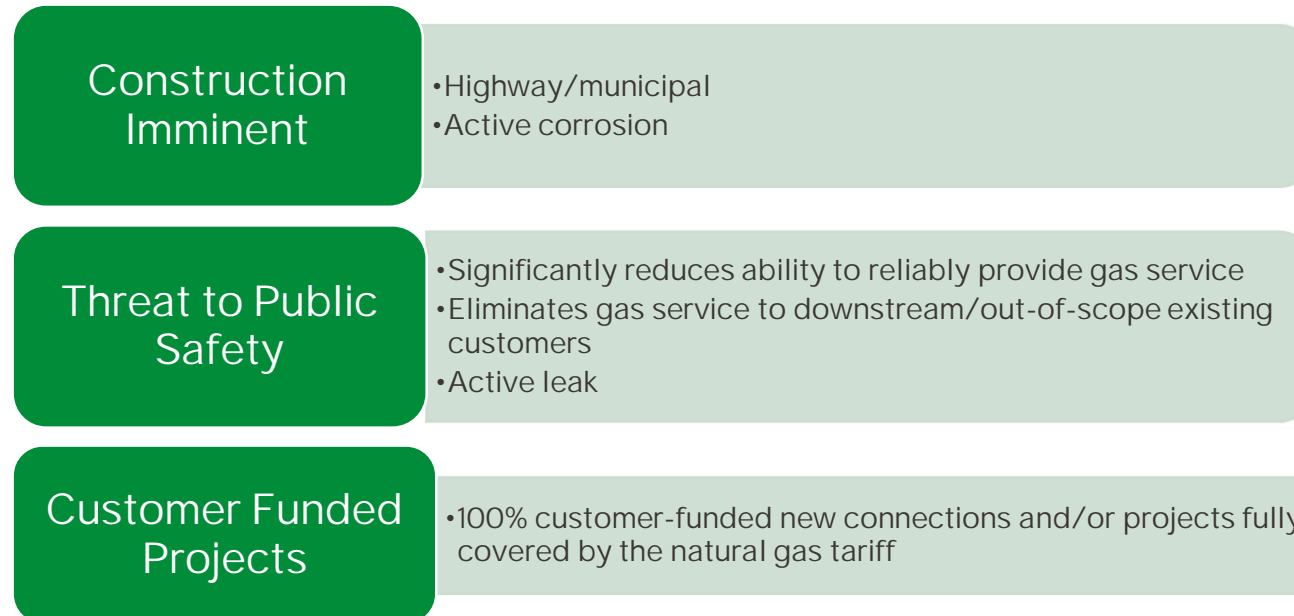
- NYSEG and RG&E's commitment to a zero-net increase in billed natural gas use under current rate plan;
- System decarbonization resulting in reduced greenhouse gas emissions;
- Achievement of targets established by the Climate Leadership and Community Protection Act (CLCPA);
- Delivery of other benefits to society and customers including lower energy costs achieved through reduced capital spending



Non-Pipes Alternative Screening

NPA Screening Criteria

- NYSEG and RG&E are committed to seeking NPA solutions to defer or avoid gas capital investments where those solutions are appropriate and cost-effective.
- All gas projects involving the construction of a new pipeline, or the replacement or expansion of existing pipeline are screened for NPA applicability.
- We are using the following screening criteria to identify projects not suitable for NPA solutions:



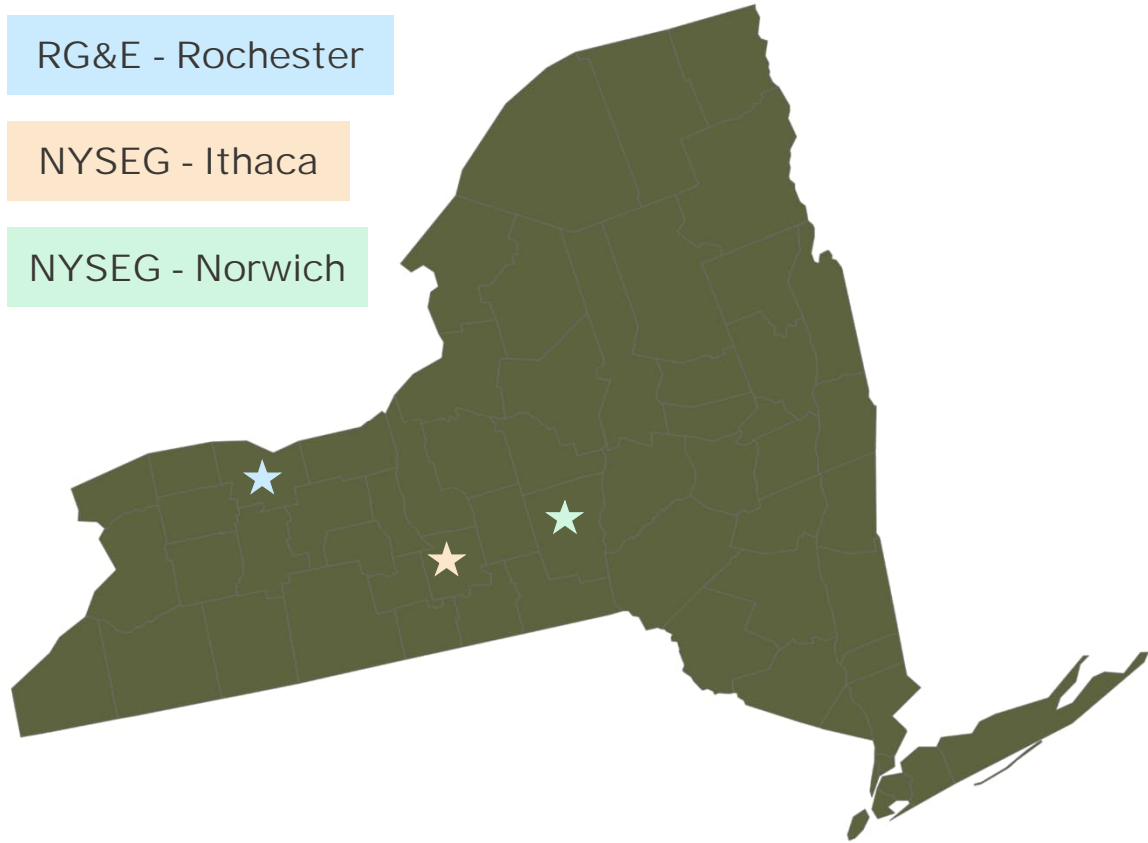


NYSEG and RG&E Utility Thermal Energy Networks Pilots

RG&E - Rochester

NYSEG - Ithaca

NYSEG - Norwich



Pilot Location	# of Buildings	DAC*	CO2 Emissions Offset (Tons)	CO2 Equivalent: Gallons of Gasoline Consumed
Ithaca	46		400	45,010
Norwich	32	✓	466	52,436
Rochester	22	✓	146	16,428

*The current list of areas designated as disadvantaged communities (DAC) is located at <https://climate.ny.gov/Resources/Disadvantaged-Communities-Criteria>.

UTEN:

A utility thermal energy network is a conglomerate of buildings connected to an ambient temperature loop system which is owned and operated by a utility. This loop system can be fed from a variety of thermal energy sources including but not limited to; geothermal, wastewater, surface water, and solar.

UTEN Benefits:

- ✓ Reduction in greenhouse gas emissions.
- ✓ Lessened electric demand compared to air source heat pumps or individual geothermal systems (i.e., beneficial electrification).
- ✓ Scaled and efficient electrification efforts from a building-by-building approach to a district or community level.
- ✓ Delivery of regional economic contributions.



Next Steps in the Gas Long-Term Planning Process

- Initial Long-Term Plan will be filed October 2, 2023
- Stakeholder data requests: NYSEGRGELTP@crai.com
- For Access to NYSEG/RGE Gas Long-Term Plan SharePoint site please email: NYRegAdmin@avangrid.com and copy atiesi@nyseg.com
- Technical Conference will be held November 2, 2023
- Final Revised Long-Term Plan will be filed in April 2024