

# National Grid NY Initial Long-Term Gas System Plan

Informational Session  
May 8, 2024

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# Meeting Logistics

National Grid NY (KeySpan Gas East Corporation d/b/a National Grid ("KEDLI"), Niagara Mohawk Power Corporation d/b/a National Grid ("NMPC"), and The Brooklyn Union Gas Company d/b/a National Grid NY ("KEDNY")) is hosting this Informational Session to share background information regarding its natural gas system and the natural gas industry to enable stakeholders' effective participation in the long-term planning process.

**Q&A** will be held at the end of the 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

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- 1** Introduction to the Natural Gas Industry
  - 2** National Grid: Company Overview
  - 3** Disadvantaged Communities, Energy Equity
  - 4** Energy Demand
  - 5** Asset Strategy
  - 6** Gas Supply, Procurement, Transportation, and Storage
  - 7** Demand-Side Management and Decarbonization Programs
  - 8** Billing Components
  - 9** Utility Emissions
  - 10** Next Steps
-

# 01

## Introduction to Natural Gas Industry

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**Elizabeth Arangio**  
**Director**  
**Energy Procurement**

# Natural Gas Basics

## ■ Colorless, shapeless, odorless

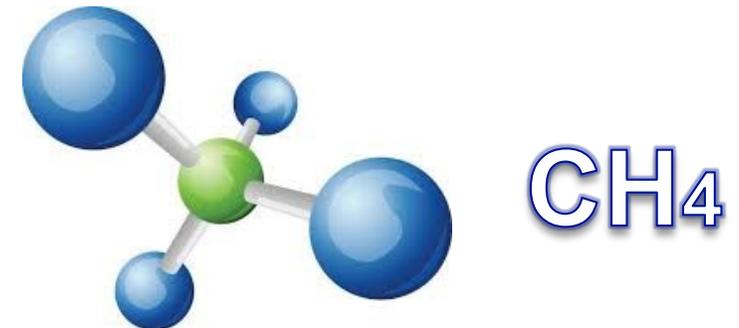
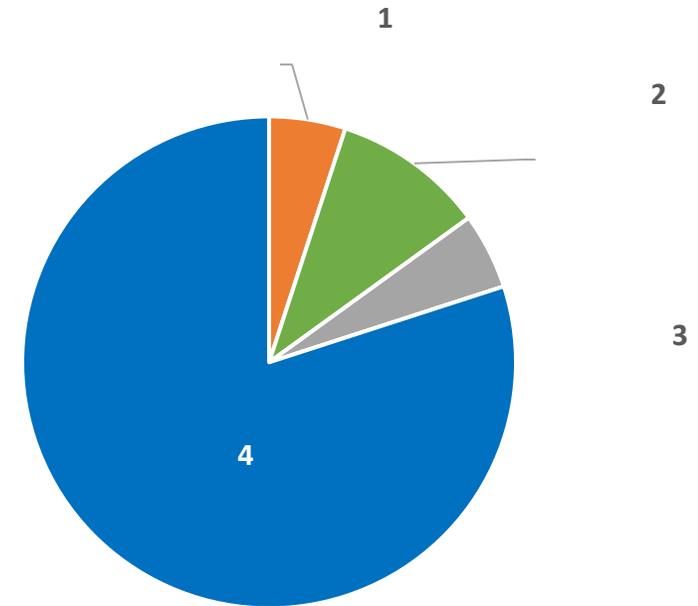
- The odorant mercaptan is added to natural gas to give it an identifiable odor

## ■ Mixture of many gases

- Methane – CH<sub>4</sub> (70-90%)
- Ethane, Propane, Butane – C<sub>x</sub>H<sub>y</sub> (0-20%)
- Carbon Dioxide (0-8%)
- Oxygen, Nitrogen, Hydrogen Sulfide, Others (0-5%)

## ■ Measured as a volume (cubic feet) or by its heat content (Btu)

- 1 CCF = 100 cubic feet (cf)
- 1 MMBtu = 1 million Btu = 1 dekatherm (Dth) ≈ 1 Mcf
- 1 Therm = 100,000 Btu
- 1 Mcf = 10 CCF
- Prefixes: MM = million, M = thousand, C = hundred



# Natural Gas Has Many Uses

## ■ Residential Customers

- Heating
- Cooking
- Air Conditioning

## ■ Commercial Customers

- Space Heating
- Water Heating
- Food Preparation

## ■ Natural Gas Vehicles

- CNG – Compressed Natural Gas
- LNG – Liquefied Natural Gas

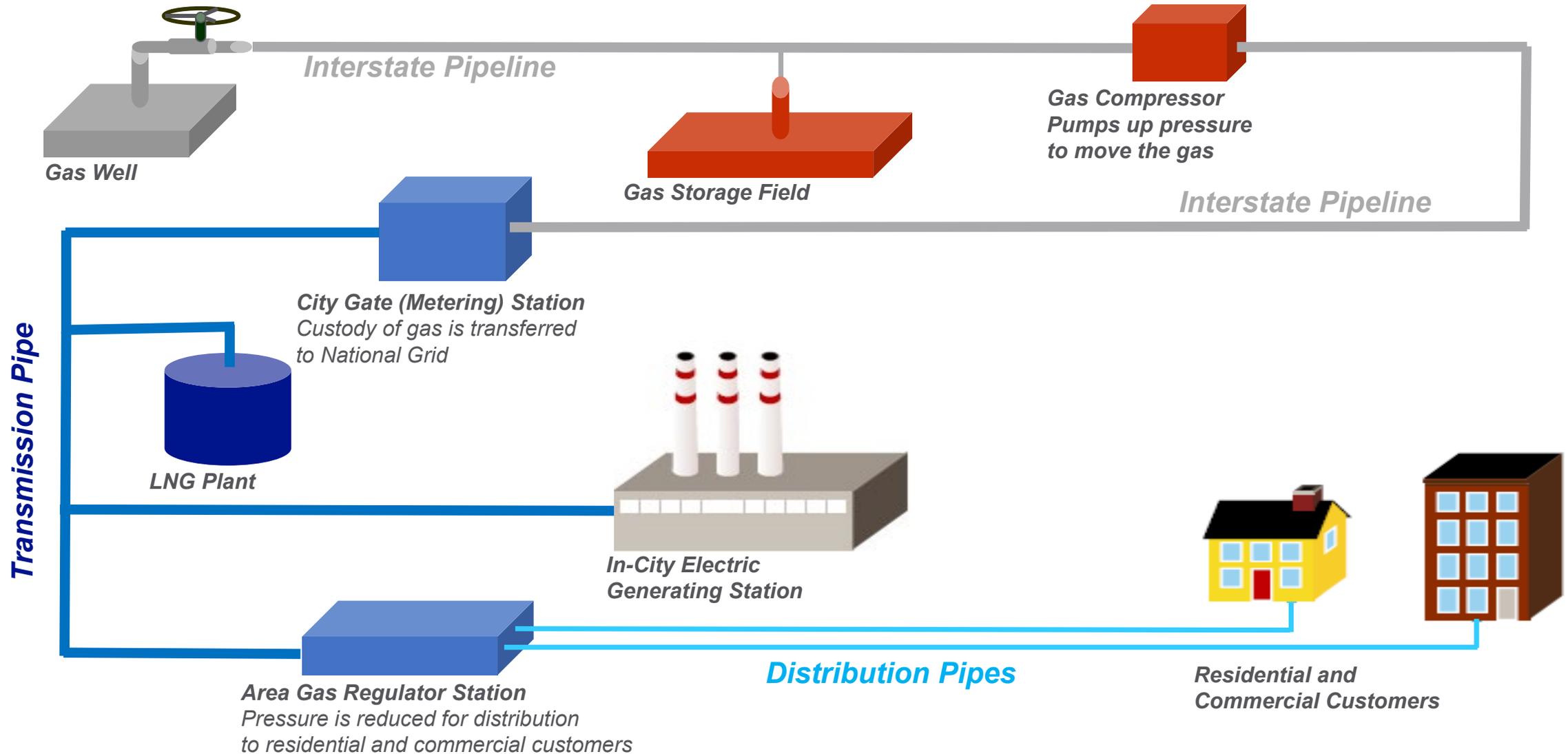
## ■ Electric Generation

- Power Plants
- Distributed Generation (Fuel Cells, Engines, Turbines)
- Backup Generators in case of power failure

## ■ Industrial (glass, metals, computer chips)

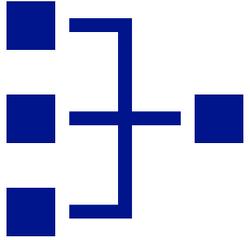


# Typical Gas System Overview



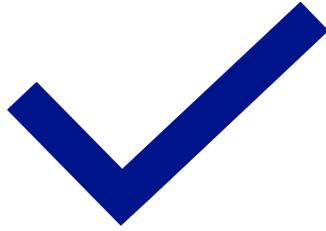
# Local Distribution Companies (LDCs) Have Several Key Accountabilities

## Gas Distribution



- Safe and Reliable distribution of natural gas to customers
- Ensuring the availability of gas supply
- Maintaining and operating the distribution infrastructure
- Delivering gas to end-users

## Infrastructure Maintenance



- Regular inspection, maintenance, and repair of gas distribution infrastructure
- Ensuring the integrity and safety of the gas system

## Emergency Response



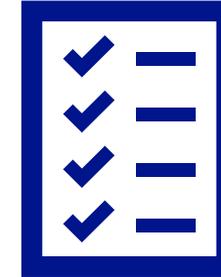
- Addressing and resolving emergency situations
- Coordinating with relevant authorities
- Ensuring public safety

## Customer Service



- Addressing customer inquiries and resolving issues
- Facilitating new gas connections
- Ensuring customer satisfaction

## Regulatory Compliance



- Adherence to safety protocols
- Complying with environmental regulations
- Reporting Requirements
- Following other industry-specific guidelines

## Energy Efficiency and Conservation



- Offering energy saving programs
- Providing information and resources to customers
- Collaborating with stakeholders to reduce energy consumption

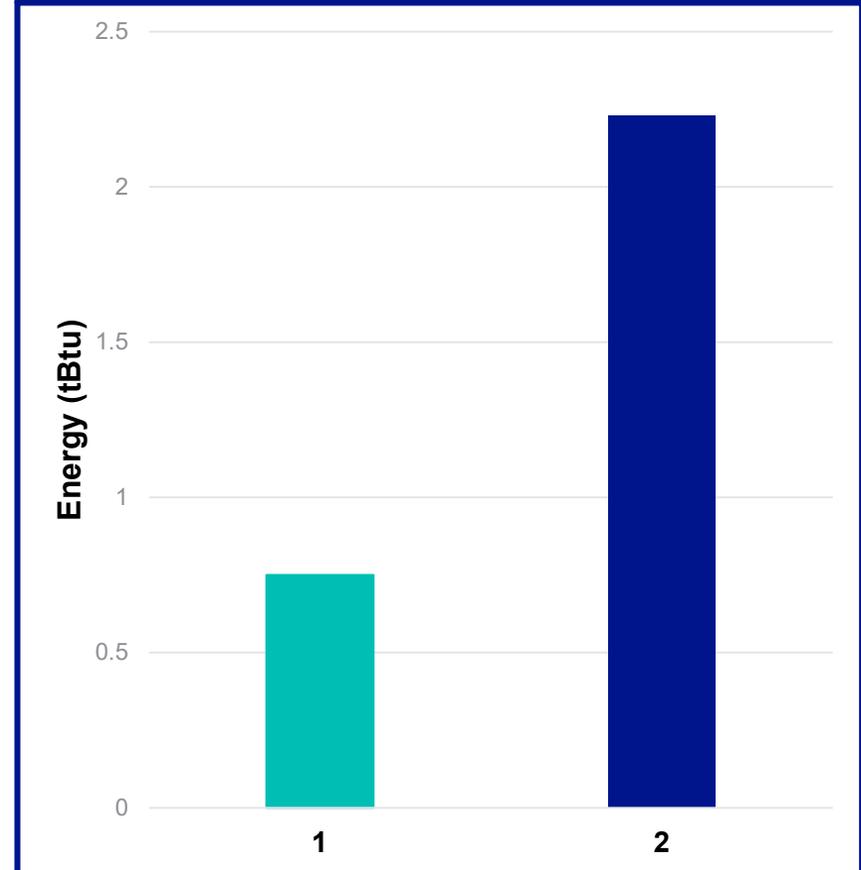
# Natural Gas Plays A Vital Role in NY's Energy Economy

Today, the natural gas network is essential for our customers' lives and livelihoods, especially on the coldest days when customer gas demand is at its peak.

Natural gas provides more than **70%** of New York's heat energy, which is the largest segment of our energy economy, accounting for approximately as much total energy as the electricity and transportation segments combined.

Sources: <https://www.eia.gov/state/seds/seds-data-complete.php>  
<https://www.nyc.gov/assets/sustainability/downloads/pdf/publications/Carbon-Neutral-NYC.pdf>

On a peak day in the winter, New York City's natural gas system delivers triple the amount of energy as the electric system on its peak day in the summer.



# 02

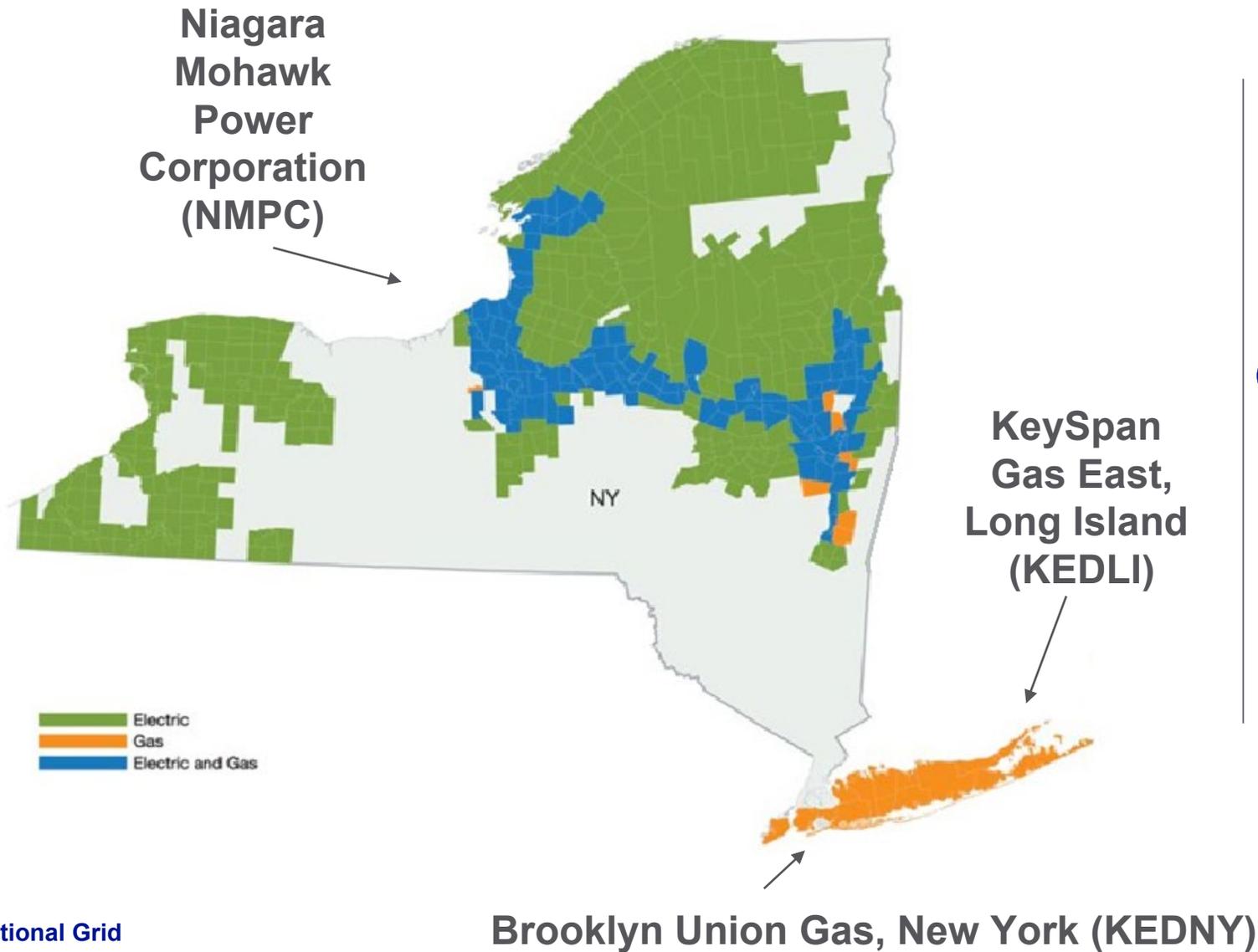
## National Grid: Company Overview

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Peter Metzdorff  
Director  
Gas System Strategic Planning

# National Grid NY Service Territory



## New York



**3**

Operating Companies  
Niagara Mohawk Power Corp.  
Brooklyn Union Gas, New York  
KeySpan Gas East, Long Island



**2.5** million  
gas customers



**1.6** million  
electric customers

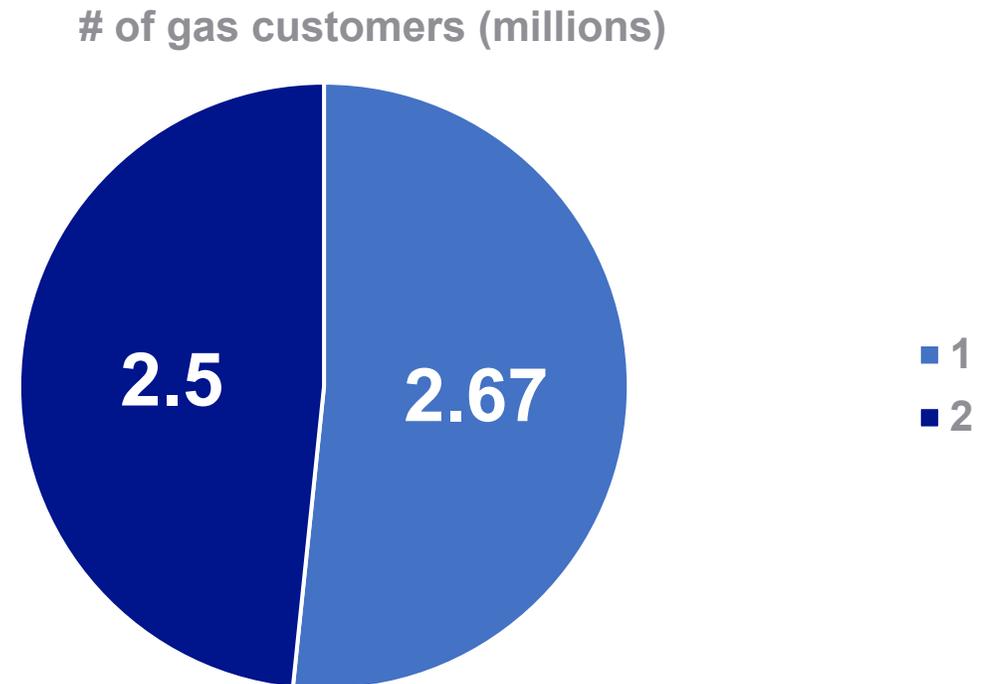


**26.4k**  
square miles

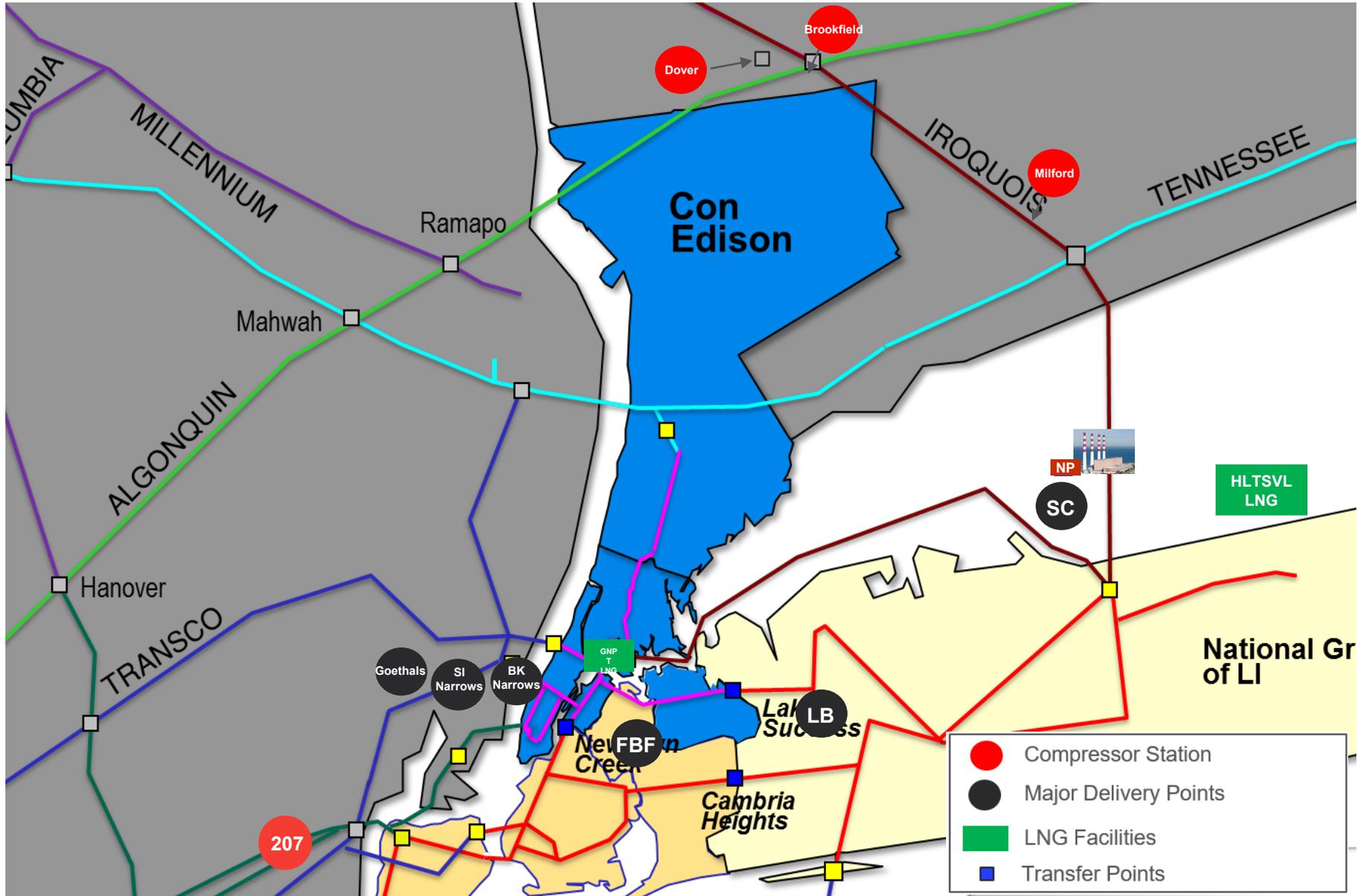
# National Grid Serves Almost Half of All Gas Customers in New York State

Utility	# of gas customers (millions)
National Grid	2.5
Con Edison/O&R	1.10
NFG	0.75
NYSEG/RG&E	0.59
Liberty	0.12
Central Hudson	0.09
Corning	0.02

Source: customer counts from company websites



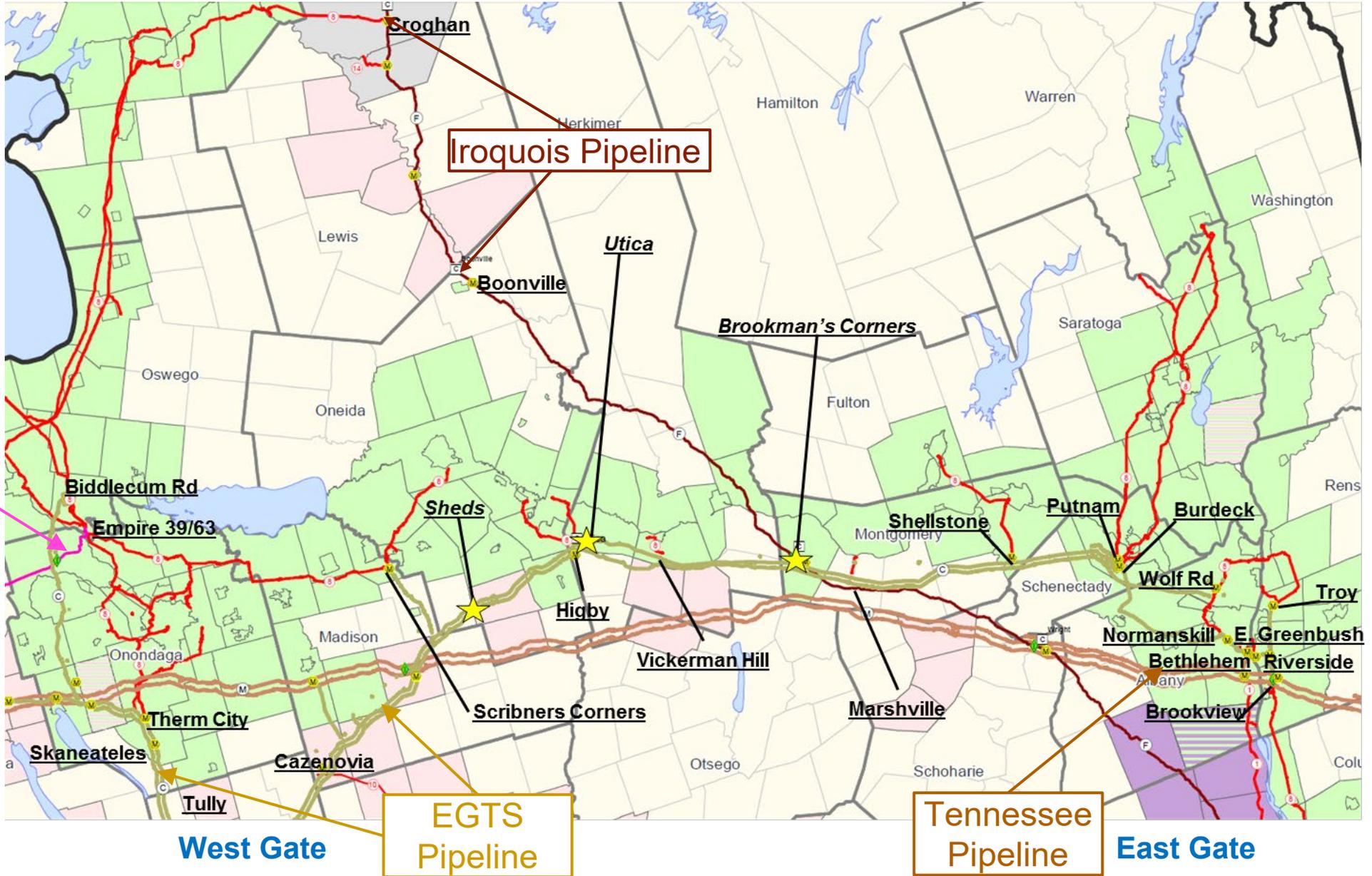
# KEDNY, KEDLI, and Con Edison form the NY Facilities System



# Our gas supply network is extensive in Upstate New York

\* Gas Supply Points are owned by Eastern Gas Transmission and Storage (EGTS) unless otherwise noted

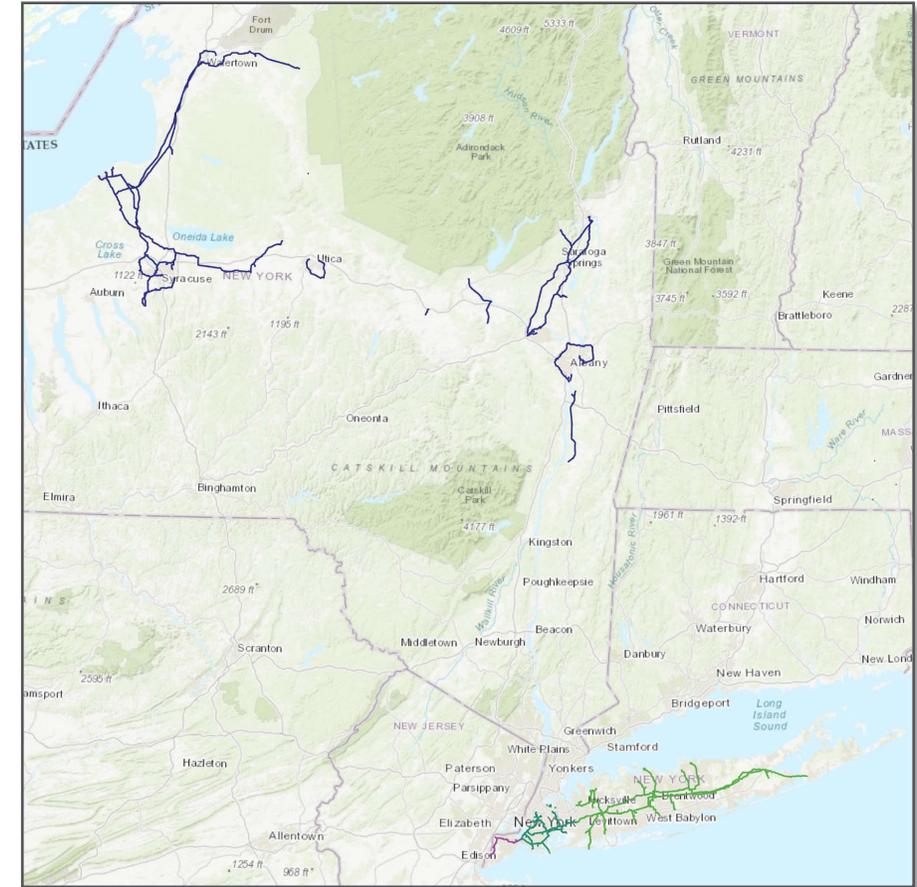
Empire Pipeline



# Transmission pipelines are large pipelines that move gas over long distances and at high pressures.

Company	Total Miles Transmission of Main	Miles DOT Transmission Main (>20% SMYS)	Miles Local Transmission Main (>124 psi, < 20% SMYS)
KEDLI	263	130	133
KEDNY	105	71	34
NMPC	580	276	304
<b>Total NY</b>	<b>948</b>	<b>477</b>	<b>471</b>

- The Downstate New York Transmission Pipelines are interconnected via New York Facilities.
- The Upstate New York Transmission Pipelines are more segmented, and therefore have more variations in operating sections of main.



# Pressure regulating stations facilitate the safe delivery of gas to our customers.

Region	Gate Stations	Regulator Stations	Total
Downstate NY	16	548	564
Upstate NY	24	370	394
<b>NY Total</b>	<b>40</b>	<b>918</b>	<b>958</b>

The pressure of gas moving through the pipe must be reduced prior to moving into smaller lines and distribution systems.

A **Gate Station** is a point where we get the custody transfer from a transmission company to our local distribution system.

**Regulator Stations** are placed along the pipeline to reduce the pressure of the gas to the appropriate operating pressure for each system and for safe, customer use.



Floyd Bennett Field Gate Station



Kennedy Gate Station

# Liquified Natural Gas (LNG) Sites

National Grid's Downstate NY LNG Sites have Liquefaction and Peak Shaving Vaporization Capabilities as well as Boil-Off Management Systems.

The double wall LNG tanks have carbon steel outer shells with a 9% nickel steel inner tank. The annular space is filled with perlite insulation.

LNG provides an efficient way to store gas, as the volume of natural gas in its liquid state is about 600 times smaller than its volume in a gaseous state in a natural gas pipeline. LNG Sites provide on system localized storage, which are typically filled during off-peak season, and allow for a high hourly vaporization rate.

Ensures reliable supply during peak demand or supply constraints, mitigating risks associated with upstream supply issues (e.g., Winter Storm Elliot, December 2022).

Greenpoint, Brooklyn	Holtsville, Long Island
<ul style="list-style-type: none"><li>▪ <b>Total Storage of 1.6 BCF</b><ul style="list-style-type: none"><li>○ Tank #1 - 600 MMSCF</li><li>○ Tank #2 - 1 BCF</li></ul></li><li>▪ <b>Liquefaction Design rate of 8,500 dth per day</b></li><li>▪ <b>Maximum Vaporization rate of ~ 280,000 dth per day</b></li><li>▪ <b>Dual turbo-expander open end system design</b></li></ul>	<ul style="list-style-type: none"><li>▪ <b>Total Storage of 600 MMSCF</b></li><li>▪ <b>Liquefaction Design rate of 6,300 dth per day</b></li><li>▪ <b>Maximum Vaporization rate of ~ 100,000 dth per day</b></li><li>▪ <b>Nitrogen Componder-expander System Design</b></li></ul>



Greenpoint, Brooklyn



Holtsville, Long Island

# Compressed Natural Gas (CNG) Injection Stations

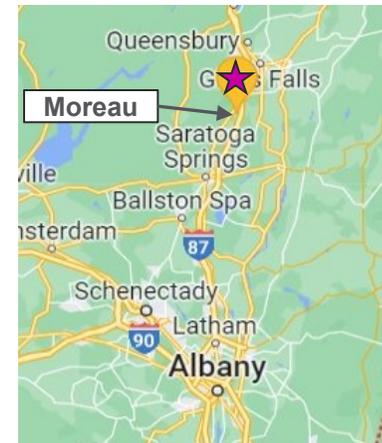
National Grid's CNG Injection Stations provide localized pressure support. CNG is delivered via trucking during the winter season and provides relatively small amounts of supply for our gas network.

## Downstate NY

- **Four 2,200 Dth/Hr Sites**
  - Glenwood CNG
  - Inwood CNG
  - Barrett CNG
  - Farmingdale CNG
- **One 1,100 Dth/Hr Site**
  - Riverhead CNG
  - Planned upgrade to 2,200 Dth/Hr in 2025

## Upstate NY

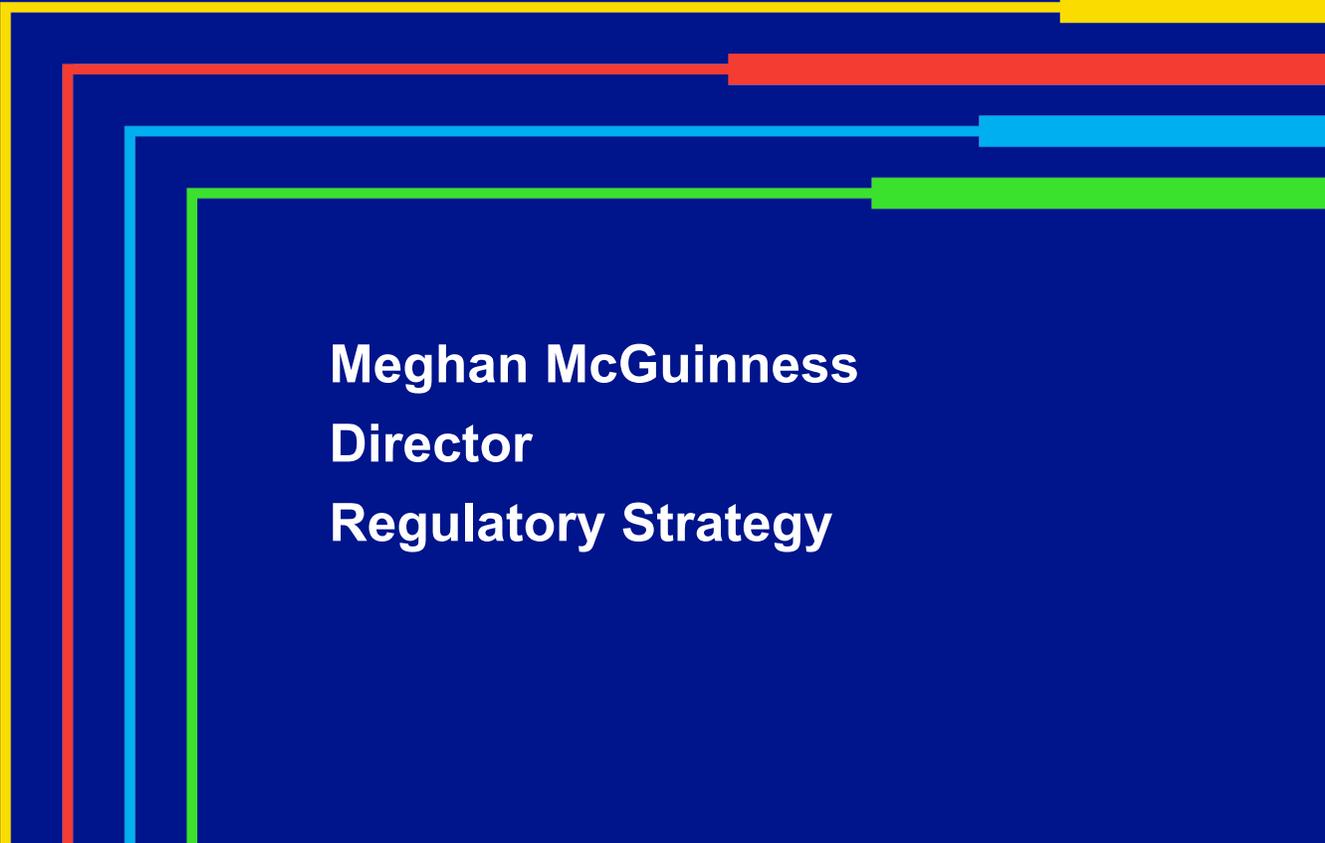
- **One 1,100 Dth/Hr Site**
  - Moreau CNG
  - Planned upgrade to 2,200 Dth/Hr in 2024



# 03

## Disadvantaged Communities, Energy Equity

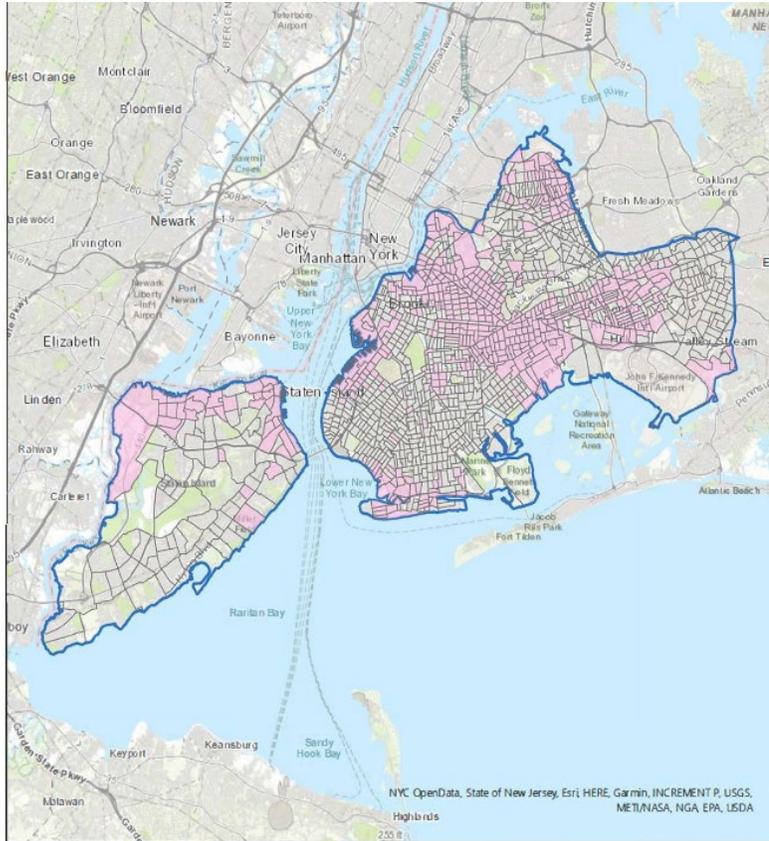
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Meghan McGuinness  
Director  
Regulatory Strategy

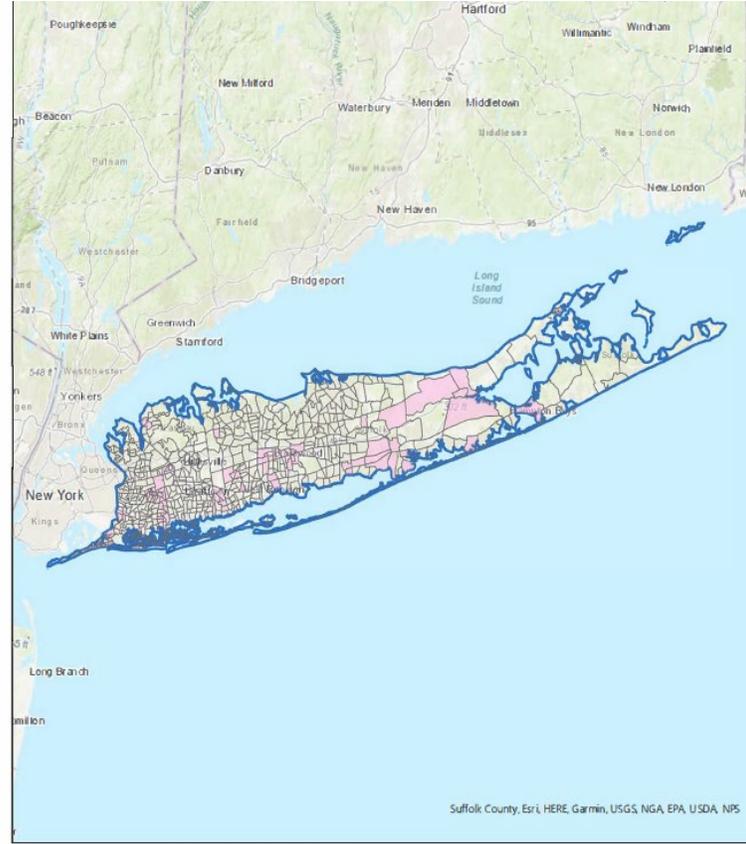
# Disadvantaged Communities – KEDNY, KEDLI, NMPC

KEDNY



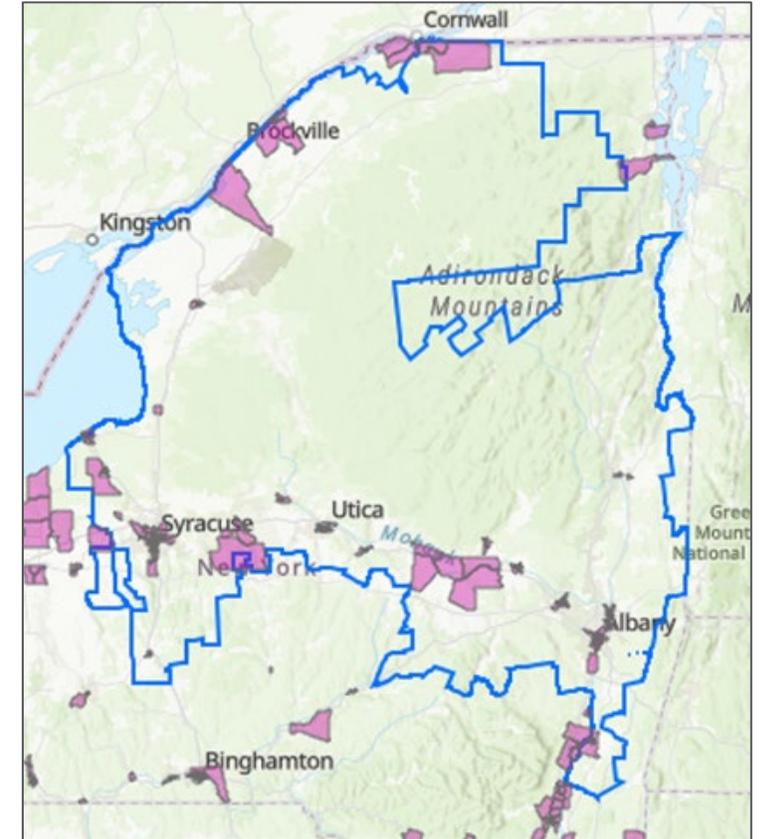
-  KEDNY Service Territory
-  Designated as DAC
-  Not Designated as DAC

KEDLI



-  KEDLI Service Territory
-  Designated as DAC
-  Not Designated as DAC

NMPC



-  NMPC Service Territory
-  Designated as DAC
-  Not Designated as DAC

The blue lines indicate National Grid's gas service territory. NMPC's service territory includes both gas and electric customers.

# Customer Demographics

## Energy Affordability Program (EAP)

Households that meet the low-income criteria are eligible for the Company’s Energy Affordability Program which provides a bill discount to customers with the goal that a customer pays no more than 6% of their income on their energy bills.

## Estimated Low-to-Moderate Income Population

- Low income criteria considers households with a total income of 60% or below the State Median Income.
- Moderate income criteria considers households with a total income in the range of 61% of State Median Income – 80% of State or Area Median income (whichever is higher).

	Gas Customers Enrolled in EAP	% Gas Customers Enrolled in EAP	Potentially Low Income	Potentially Moderate Income	Actual + Potential LMI Customers
NMPC	63,630	10%	20%	9%	39%
KEDNY	149,054	12%	21%	18%	51%
KEDLI	13,065	2%	15%	13%	31%

*As of Dec 2023*

Based on purchased income data, National Grid estimates 20% of customers are potentially low income and 13% of customers are potentially moderate income.

Low- and moderate-income (LMI) customers are also eligible for energy efficiency and building electrification programs offered either through the Company or through NYSERDA.

# We are Committed to Energy Affordability and Equity



## Fairness, Affordability, and Equity are Central to our Company Strategy

Ensuring that every customer has access to affordable and reliable energy, and that we all share the benefits of a net zero future. Commitment to advancing the CLCPA's clean energy and equity goals, while integrating procedural, distributional, and structural equity more broadly across our business.



## We offer a range of solutions for Low and Moderate income customers

Solutions including income-eligible monthly bill credits, payment plans, forgiveness programs, grant programs, and personalized support. Many of our income-eligible customers can see particular benefit from the energy efficiency programs we offer.



## Proposed new energy equity programs ensure that no customer is left behind

In the clean energy transition, we have proposed increasing access to low-carbon energy technologies in targeted communities, from community-shared solar to electric vehicle charging access to zero-emission school bus incentives.



## Advocacy for Policy to create new public funding sources

Sources that mitigate the impacts of climate policy on our customers' electric and gas bills, while in parallel producing and delivering clean energy at the lowest cost to our customers (for example, through wholesale market reforms to enable large-scale clean electricity).

# Outreach and Education



In 2022, National Grid, in partnership with the National Grid Foundation, allocated \$17 million in additional funding for low- and moderate-income customers to manage higher energy bills. With this funding, grants were created to help moderate-income families access assistance.



At National Grid, we're committed to providing reliable and affordable energy. Customers facing financial pressures that are impacting their ability to pay their energy bill may qualify for our **Energy Affordability Program (EAP)**



Customers are automatically enrolled in EAP when a Home Energy Assistance Program (HEAP) payment is added to their national grid account

HEAP is a federal grant program that can help income-eligible households to pay their energy bills. Customers can also apply online or by email, fax, or direct mail.



More information about our programs can be found on our website:

- [National Grid Grant Programs](#)
- [Energy Affordability Program](#)

# NY LMI Winter Overview 2023-2024

Outreach to income-eligible customers promoted HEAP and EAP throughout the season and also used a multi-channel approach, which included emails, postcards targeted to customers in disadvantaged communities, bill inserts and a paid social/digital campaign.

**Assistance is Available**

▶ **Home Energy Assistance Program (HEAP)**

*Regular HEAP opens November 1, 2023*

HEAP is a federal grant program that can help income-eligible households pay their energy bills. It is not a loan and does not have to be paid back. Click below to apply or visit the HEAP page [here](#) to check eligibility.

[Apply here](#)

▶ **Energy Affordability Program (EAP)**

If you receive a HEAP payment on your National Grid account you are automatically enrolled in EAP and will receive a monthly bill credit. If you receive HEAP on another utility heating account or participate in a qualifying program you can apply to receive this credit. To check eligibility, click below.

[Learn more](#)

National Grid  
This email was sent to EMAILADDRESS@domain.com | 300 Erie Boulevard West, Syracuse, NY 13202  
Please do not respond to this email as this email address is not monitored.  
This is an important notice. Please have it translated. It is an auto-generated notice. Please do not respond to this email as this email address is not monitored.  
300 Erie Boulevard West, Syracuse, NY 13202  
030223 National Grid  
048647 LNY1 (10/23)

HEAP/Energy Affordability Program Emails

**nationalgrid**

**Get Help When You Need It This Winter**

We know winter energy bills can be a challenge, especially as other household expenses remain high. When you need assistance this winter, we're here to help with programs and services to keep you and your home comfortable and safe. We can also help you find ways to save energy and manage your costs.

For extra support, connect with a National Grid Consumer Advocate. Call 1-800-642-4272 or visit [ngrid.com/consumeradvocates](http://ngrid.com/consumeradvocates)

**Find the Solutions That Are Right For You**

**Energy Affordability Program (EAP)**  
If financial pressures are impacting your ability to pay your energy bill, you may qualify for a monthly bill credit. To learn more or apply, visit [ngrid.com/eap](http://ngrid.com/eap) or scan the QR code with your mobile phone camera.

**Here to Help**  
Explore all the ways our Customer Savings Initiative can help at [ngrid.com/heretohelp](http://ngrid.com/heretohelp)

Manage your energy bill	Control your energy use	Find assistance to pay your bill
<ul style="list-style-type: none"> <li>Budget Plan</li> <li>Energy Affordability Program</li> <li>More Time to Pay</li> </ul>	<ul style="list-style-type: none"> <li>Easy Energy Saving Tips</li> <li>Energy Saving Products and Programs</li> <li>No-cost Home Energy Assessments</li> </ul>	<ul style="list-style-type: none"> <li>Grant Programs</li> <li>Connect with a Consumer Advocate</li> <li>Help Making Payments</li> </ul>

048647 10/23

EAP-Here to Help Bill Insert to customers in UNY who are in arrears

Find the Solutions that are Right for You.

**nationalgrid**  
300 Erie Boulevard West  
Syracuse, NY 13202

**Energy Affordability Program (EAP)**  
If financial pressures are impacting your ability to pay your energy bill, you may qualify for a monthly bill credit.

To learn more or apply, visit [ngrid.com/eap](http://ngrid.com/eap) or scan the QR code with your mobile phone camera.

**HEAP**  
Income-eligible customers can apply for a HEAP grant to help pay their energy bills. The program typically opens in November and closes in March. To learn more visit [ngrid.com/grants](http://ngrid.com/grants)

**Here to Help**  
Learn how to manage your bill, save energy, and access additional assistance programs that can provide support for energy and grocery bills at [ngrid.com/heretohelp](http://ngrid.com/heretohelp)

048647 10/23

**nationalgrid**

**Help is available through a variety of programs. Apply for assistance today.**

For extra support, connect with a National Grid Consumer Advocate. Call 1-800-642-4272 or visit [ngrid.com/consumeradvocates](http://ngrid.com/consumeradvocates)

Targeted EAP + HEAP Postcard for UNY Disadvantaged Communities (approx. 275K recipients)

**Paid Social ads promoting payment assistance to Income-Eligible customers in UNY**

**Everyone needs a little help sometimes.**

**We can help you find payment assistance.**

**You may qualify for a monthly bill credit.**

**We can help you access additional assistance programs.**

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**Need assistance managing your energy bills?**

**We can help**

[ngrid.com/heretohelp](http://ngrid.com/heretohelp) **nationalgrid**

DNY OOH Digital Billboards  
Delivered over 500K impressions:

**nationalgrid**

**Everyone needs a little help sometimes.**

**We can help you find payment assistance or see if you qualify for a monthly bill credit.**

Are you or someone you know concerned about managing your energy bill? You may qualify for assistance through the Home Energy Assistance Program (HEAP) or the Energy Affordability Program (EAP).

[Find Assistance Now](#)

December Emails to Income Eligible Customers promoting HEAP

**National Grid**  
April 1 at 9:57 AM

The New York State Office of Temporary and Disability Assistance Home Energy Assistance Program (HEAP) can help eligible New Yorkers heat their homes.

ICYM: HEAP has extended the deadline for Regular and Emergency HEAP applications to April 12. Learn more here: <https://ngrid.com/3xt7Rzm>

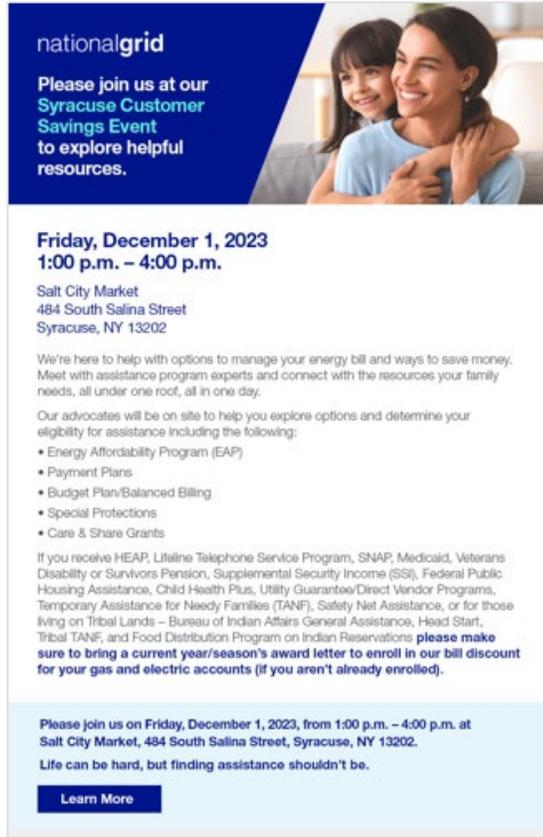
**Everyone could use a little help**

You may qualify for assistance. See today.

HEAP Social Post – March 2024

# In-Person Customer Savings Events Winter 2023-2024

**Customer Savings Events** have been a great way to connect customers in need of assistance with Consumer Advocate teams. We continue to promote these events, along with reoccurring *Connect to Care* advocate hours through targeted emails and texts. Local news and press coverage helps to spotlight these activities to wider audiences across other channels.



**nationalgrid**

Please join us at our **Syracuse Customer Savings Event** to explore helpful resources.

**Friday, December 1, 2023**  
**1:00 p.m. – 4:00 p.m.**

Salt City Market  
484 South Salina Street  
Syracuse, NY 13202

We're here to help with options to manage your energy bill and ways to save money. Meet with assistance program experts and connect with the resources your family needs, all under one roof, all in one day.

Our advocates will be on site to help you explore options and determine your eligibility for assistance including the following:

- Energy Affordability Program (EAP)
- Payment Plans
- Budget Plan/Balanced Billing
- Special Protections
- Care & Share Grants

If you receive HEAP, Lifeline Telephone Service Program, SNAP, Medicaid, Veterans Disability or Survivors Pension, Supplemental Security Income (SSI), Federal Public Housing Assistance, Child Health Plus, Utility Guarantee/Direct Vendor Programs, Temporary Assistance for Needy Families (TANF), Safety Net Assistance, or for those living on Tribal Lands – Bureau of Indian Affairs General Assistance, Head Start, Tribal TANF, and Food Distribution Program on Indian Reservations please make sure to bring a current year/season's award letter to enroll in our bill discount for your gas and electric accounts (if you aren't already enrolled).

Please join us on Friday, December 1, 2023, from 1:00 p.m. – 4:00 p.m. at Salt City Market, 484 South Salina Street, Syracuse, NY 13202.

Life can be hard, but finding assistance shouldn't be.

[Learn More](#)

Email



**nationalgrid**

**Customer Savings Event**

Please join us.

**Friday, December 1, 2023**  
**1:00 p.m. – 4:00 p.m.**

Salt City Market  
484 South Salina Street  
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Advocates will be on-site to help you explore options and determine your eligibility for assistance including the following:

- Energy Affordability Program (EAP)
- Payment Plans
- Budget Plan/Balanced Billing
- Special Protections
- Care & Share Grants

If you receive HEAP, Lifeline Telephone Service Program, SNAP, Medicaid, Veterans Disability or Survivors Pension, Supplemental Security Income (SSI), Federal Public Housing Assistance, Child Health Plus, Utility Guarantee/Direct Vendor Programs, Temporary Assistance for Needy Families (TANF), Safety Net Assistance, or for those living on Tribal Lands – Bureau of Indian Affairs General Assistance, Head Start, Tribal TANF, and Food Distribution Program on Indian Reservations please make sure to bring a current year/season's award letter to enroll in our bill discount for your gas and electric accounts (if you aren't already enrolled).

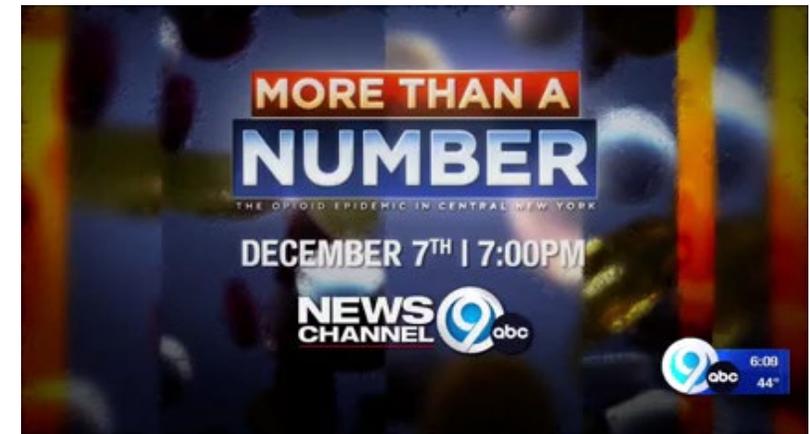
IN PARTNERSHIP WITH  
**Albany Family FOUNDATION**

Connect with those who care.  
Life can be hard, but finding assistance shouldn't be.

Flyer

NGRID: Join National Grid Advocates in Syracuse on 12/1 and learn how to save on your energy bill. More details: [ngrid.com/nyevents](http://ngrid.com/nyevents). Reply STOP to end.

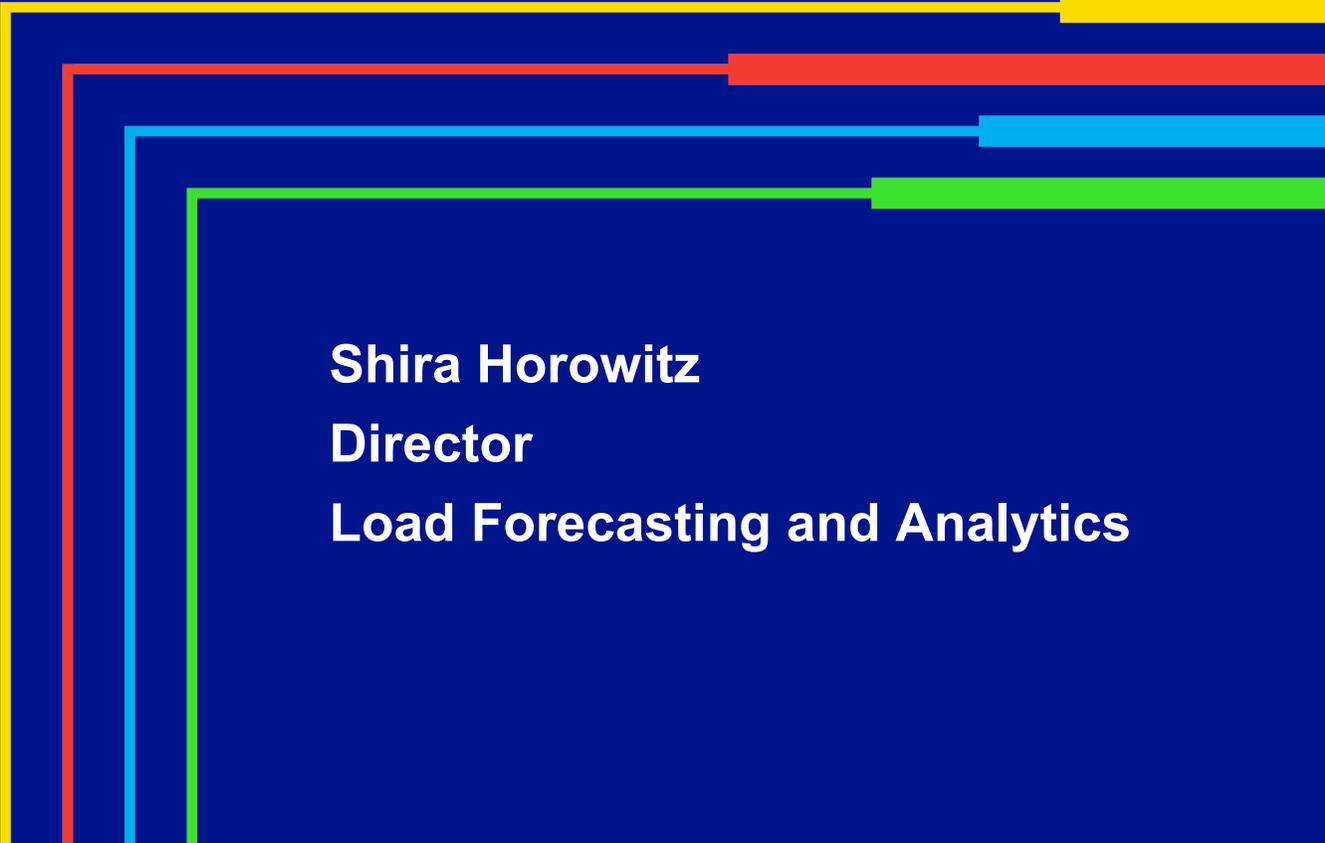
Text



News clip from Syracuse outreach event on 12/1/23

# 04

## Energy Demand



**Shira Horowitz**  
**Director**  
**Load Forecasting and Analytics**

# Historically, demand in the gas industry is driven by weather with higher demand in the winter due to colder temperatures.

Forecast	Description	Design Standard
<b>Retail Forecast</b>	<ul style="list-style-type: none"> <li>Monthly Sales and customer counts (at meter level)</li> <li>Used for ratemaking</li> </ul>	<p>Normal year = Average of historical weather</p> <p>The Company observes annual average temperature trending upward. Normal Year revised periodically to reflect the most recent values.</p>
<b>Wholesale Forecast</b>	<ul style="list-style-type: none"> <li>Daily wholesale sendout at city gate level</li> <li>Used to ensure adequate seasonable supplies</li> </ul>	<p>Normal year (rate making)</p> <p>Design year (adequate supply) = coldest annual weather for which the Company plans. Periodically updated to reflect recent trends.</p>
<b>Design Day</b>	<ul style="list-style-type: none"> <li>Wholesale sendout on coldest day for which the Company plans.</li> <li>Used to ensure adequate capacity to maintain integrity of distribution system.</li> </ul>	<p>Based on extremely cold observed day:</p> <p>Upstate NY: -10°F = 75 HDD (experienced on 26 Jan 1994)</p> <p>Downstate NY: 0°F = 65 HDD (experienced on 9 Feb 1934)</p> <p>While the annual climate trend is warming, there is no conclusive evidence that cold spells cannot still occur. Therefore, the Company continues to maintain its Design Day standard for events such as Winter Storm Uri in 2021. In a 24-hour period, the Company has less operational flexibility.</p>
<b>Design Hour</b>	<ul style="list-style-type: none"> <li>Wholesale sendout on highest hour of Design Day</li> <li>Used to establish maximum hourly flow to maintain integrity of distribution system</li> </ul>	<p>Highest hourly demand on Design Day</p>

# Overview of Forecasting Process – Adjusted Baseline



## Post-model adjustments are considered for...

- Impacts of **DSM programs**  
*(Energy Efficiency, Electrification of Heat, and Demand Response)*
- **Public Policy** *(e.g. LL97, City and State Gas Bans)*
- **Major shocks** *(e.g. moratoria – not currently included)*
- **Other factors** *(e.g. oil-to-gas conversion saturation, major steps in tech/new market trends)*

## Criteria for Post-model adjustments

- **Regulatory Approval**
- **Is there enough information**
- **Is the impact measurable and substantive**
- **Clear path to implementation**
- **In time for GLF**

# 05

## Asset Strategy



**Peter Metzdorff**  
**Director**  
**Gas System Strategic Planning**

# Our Safety and Reliability Strategy



## Prevention

- Gas Pipeline Safety Management System
- Gas Compliance Oversight
- Safety Leadership/ Focus Days



## Detection

- Leak Surveys
- Leak Detection
- Service Line Inspections



## Response

- Leak Response
- Leak Repairs
- First Responder Training

# What does a gas outage look like?

A gas outage occurs when there is a disruption in the supply of natural gas to customers. In the rare event of a gas outage, customers may experience a sudden loss of gas service. This means that gas appliances, such as heaters, stoves, and water heaters, will not function.

## Assess and Secure

- Once a gas outage is reported, utility crews are dispatched to assess the situation and identify the cause of the disruption. They will secure service to impacted customers to ensure safety.

## Repair

- Utility crews will work to repair any damaged infrastructure or address the issue causing the outage.

## Safety Check

- Before restoring gas service, utility crews perform thorough safety checks to ensure that the gas system is stable and there are no risks of leaks or other hazards. This involves inspecting pipelines, appliances, and conducting necessary tests.

## Restore Service

- The utility company will restore gas service to affected customers. This involves re-establishing the gas supply and ensuring that gas appliances are functioning properly. Depending on the scale of the outage, restoration time can vary significantly, which can have a substantial impact on customers in cold winter months.

## Customer Communication

Throughout the restoration process, utility companies aim to keep customers informed about the progress and expected timelines for service restoration. They may provide updates through various communication channels, such as phone calls, text messages, or online platforms.

# Capital investments are the cornerstone of our commitment to safety and reliability.

- ❑ **National Grid is focused on infrastructure upgrades to ensure our networks are capable of meeting customers' energy needs and compliance with all safety requirements and other mandated work.**
- ❑ **Weather events such as Winter Storm Elliott (December 2022) highlight the need for reinforcement and resiliency projects to ensure the continued provision of safe and reliable service to customers.**

**Mandated** projects significantly reduce system emissions through the retirement of leak prone pipe and the repair of high-emitting leaks. These projects also allow us to assess the condition of our system to minimize the risk of an adverse event.

- **Leak Prone Pipe Retirement**
- **Transmission System and Station Integrity (PHMSA)**
- **Service Replacement and Main Replacement/Upgrades**

**Reliability** projects improve system performance, create a more resilient gas network and ensure gas supply for peak days.

- **Smart Residential Methane Detectors/Advanced Communication Infrastructure**
- **Regulator Station Replacement/Upgrades**
- **Reinforcement**
- **Storm Hardening efforts**

# Retiring Leak Prone Pipe will reduce the risk of future leaks, ensures safe and reliable service, and minimizes GHG emissions.

**Leak Prone Pipes (LPP)** are made of materials that are at higher risk for future leaks. They can be in place for both mains and service lines to individual customers throughout the distribution system. These pipes tend to be bare steel, non-cathodically protected steel, cast iron or other certain types of brittle plastic (Aldyl-A plastic).

## Replacing Leak Prone Pipe in our distribution system:

- Mitigates open gas leaks, which improves safety of our gas network and for our communities.
- Improves network resiliency, as newer plastic mains and services have a smaller risk for future leaks.
- Increases system efficiency by reducing unnecessary loss of gas.
- Reduces greenhouse gas emissions, as less natural gas is leaked to the atmosphere.

Company	Distribution Miles	LPP Miles Remaining	% LPP Miles
KEDNY	4,286	1,416	33%
KEDLI	8,413	3,018	36%
NMPC	8,921	353	4%
<b>Total NY</b>	<b>21,620</b>	<b>4,787</b>	<b>22%</b>

National Grid is mandated through the Proactive Main Replacement Program (MRP) to remove a minimum number of miles of LPP from service annually across the New York operating companies.

# 06

## Gas Supply, Procurement, Transportation, and Storage

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Elizabeth Arangio  
Director  
Energy Procurement

# The Company maintains gas supply portfolios that can serve firm customers every day of the year, including design day.

The Gas Supply Portfolio is constructed over a 5-10 year horizon to meet the forecasted design hour, day, and seasonal requirements of customers.

## Resources

- **Gas Supplies**
  - **Delivered Services**
  - **Pipeline Services**
  - **On-system Assets**
- |                          |     |
|--------------------------|-----|
| Firm Transportation (FT) | LNG |
| Underground Storage      | CNG |
| No-Notice Balancing      |     |

## Scheduling and Balancing

- Pipelines need to be notified of expected volumes at receipt and delivery meters in accordance with contracts and known restrictions.
- The Company and the pipelines work together to ensure supply and demand are in balance each day.

## Pipeline Transportation Contract Rates Structures

- 1. Gas Supply Costs**
- 2. Demand or Reservation Charges**
  - Charged by pipelines to reserve capacity and are billed regardless of actual usage.
  - Assessed based on the Maximum Daily Quantity of each contract.
- 3. Fuel Charges (%)**

Part of a pipeline's rates that requires an additional volume of gas to be purchased at the receipt zone in order to fuel the pipeline compressor stations for delivery downstream.
- 4. Commodity Charges**

Portion of the pipeline charges that are incurred as the space is used.

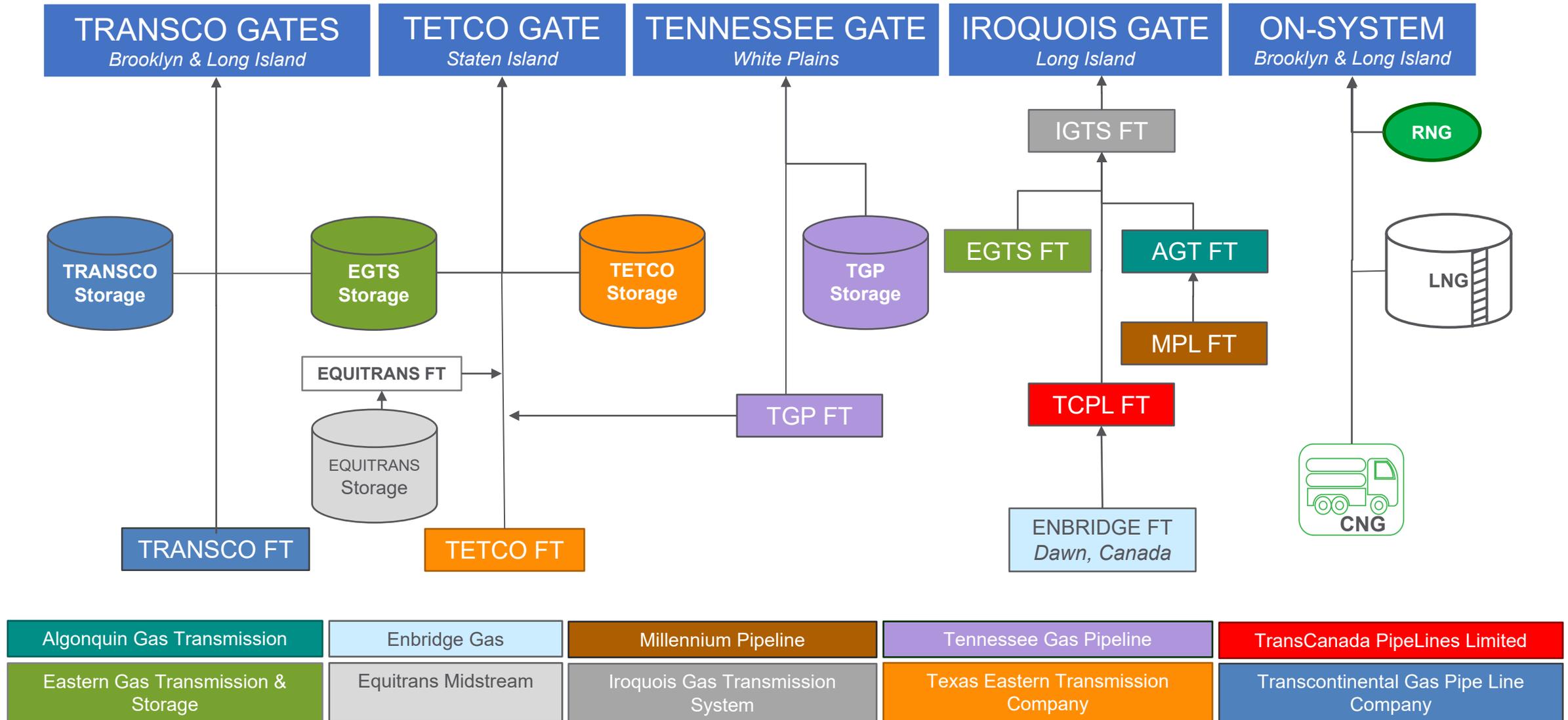
# Our Gas Purchasing Strategy Emphasizes Affordability and Reliability

- **The strategies National Grid implements to achieve its supply purchase goals are:**
  - Dispatch the gas portfolio assets under a least cost strategy while ensuring reliability
  - Maintain a diverse portfolio of gas supply, storage and transportation capacity contracts with varying terms and pricing provisions
  - Implement a formal hedging program to mitigate price volatility
- **The benefits of a diversified portfolio:**
  - Minimizes exposure to price volatility by purchasing at a variety of locations and by withdrawing gas at a known price from storage

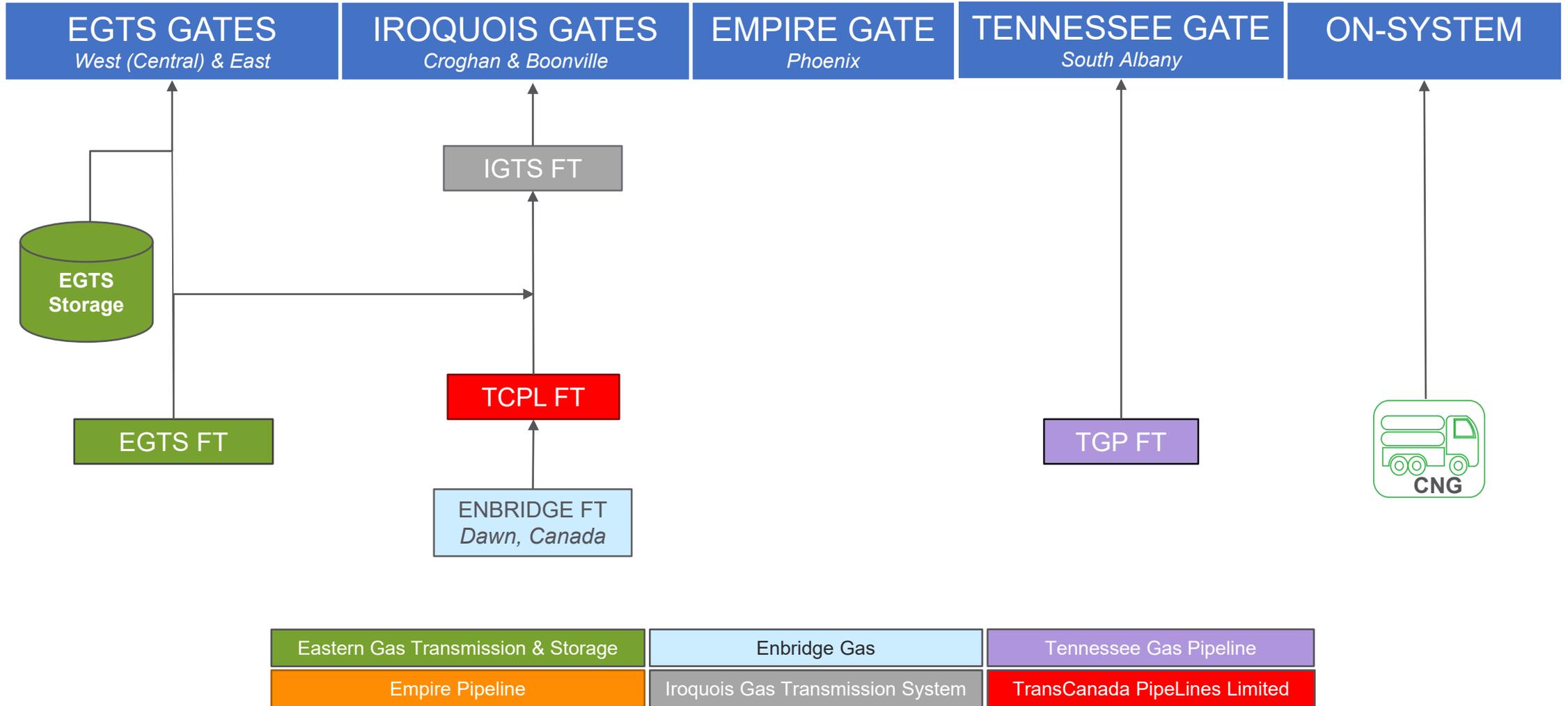
## Company-Specific Portfolio Strategies

For Downstate New York	For Upstate New York
<ul style="list-style-type: none"><li>• Manage the KEDNY and KEDLI supply portfolios on a combined basis per Case 05-G-0903 to maximize supply and demand synergies</li><li>• Contract jointly for incremental capacity and bundled city gate supply to reduce demand costs</li><li>• Apply the same demand and commodity cost of gas to all KEDNY and KEDLI customers</li></ul>	<ul style="list-style-type: none"><li>• Maximize Peak Hour Entitlements and Reduce Peak Hour Flows to adhere to contractual limits</li></ul>

# KEDNY & KEDLI Gas Supply Flow Diagram



# NIMO Gas Supply Flow Diagram

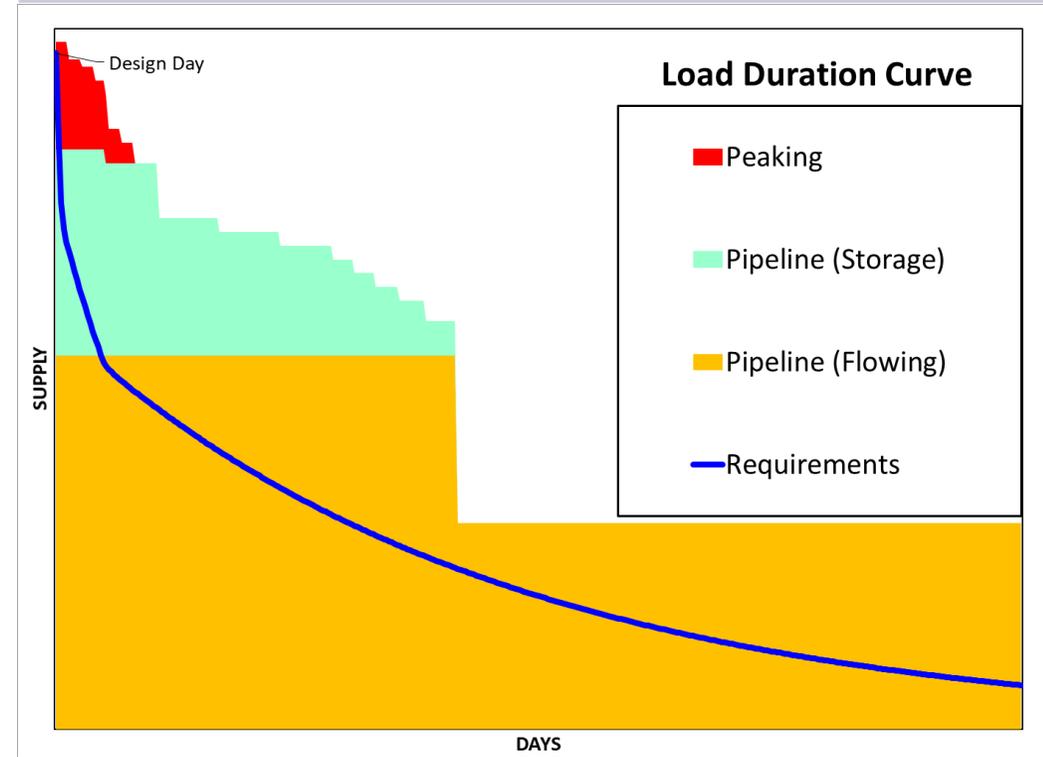


# Design Year / Season / Day / Hour Planning Overview

	KEDNY, KEDLI	NMPC
<b>Design Year &amp; Design Season</b>	Contracts and on-system assets sized to meet forecasted requirements for firm and non-firm demand response (NFDR) customers	Contracts and on-system assets sized to meet forecasted requirements for firm and SC-8 D1 customers
<b>Design Day</b>	Contracts and on-system assets sized to meet forecasted requirements for firm customers only	Contracts and on-system assets sized to meet forecasted requirements for firm and SC-8 D1 customers
<b>Design Hour</b>	Ensure contracts and on-system assets can flow the maximum hourly volume needed to serve a design day	

## Load Duration Curves Filed Annually

Ensure supply portfolio can meet a severe winter season and design day.



# National Grid Operates in Supply-Constrained Regions

- Our operations are conducted in areas with limited gas supply infrastructure and capacity.
- The existing infrastructure are not sufficient to meet the growing demand for gas.
- Factors such as population growth, industrial expansion, and changing energy needs contribute to this demand.

## Challenges

- Limited capacity to meet peak demand periods, leading to potential supply shortages.
- Difficulty in maintaining consistent gas pressure and flow rates during high-demand periods.
- Increased risk of service disruptions and interruptions due to system strain.

# 07

## **Demand-Side Management and Decarbonization Programs**

**nationalgrid**



**Dirk Chiles**  
Director, Customer Energy Management

**Mona Chandra**  
Manager, Distributed Energy Resources

**Owen Brady-Traczyk**  
Director, Future of Heat Solutions

# Demand-Side Management Programs: Four Primary Pillars

National Grid's portfolio of demand-side management (DSM) programs are critical to ensuring reliability and reducing demand for natural gas on the coldest days of the year.



## 1. Energy Efficiency

- Programs for residential customers
- Programs for commercial and industrial customers
- Programs for low-to-moderate income (LMI) customers



## 2. Electrification

- UNY: Incentives via the statewide Clean Heat program for ground- and air-source heat pumps for space and water heating
- DNY: referrals to Con Edison and PSEG-LI



## 3. Gas Demand Response

- Commercial, industrial, and multifamily: Load-shedding and load-shifting programs
- Residential: Bring Your Own Thermostat (BYOT) and behavioral programs
- NYC hybrid heating pilot, co-funded by the Department of Energy



## 4. Non-Pipeline Alternatives (NPA's)

Considered for:

- Main extensions
- Leak prone pipe (LPP) replacements
- Peak gas demand reduction

# National Grid’s award-winning energy efficiency programs reduce gas consumption, save customers money, and help achieve the state’s climate goals.

## Residential Portfolio:

- Mix of incentives for single-family homes and small dwellings
- In-store incentives, contractor-installed weatherization rebates, online marketplace
- Behavioral tools like Home Energy Reports for energy-saving tips

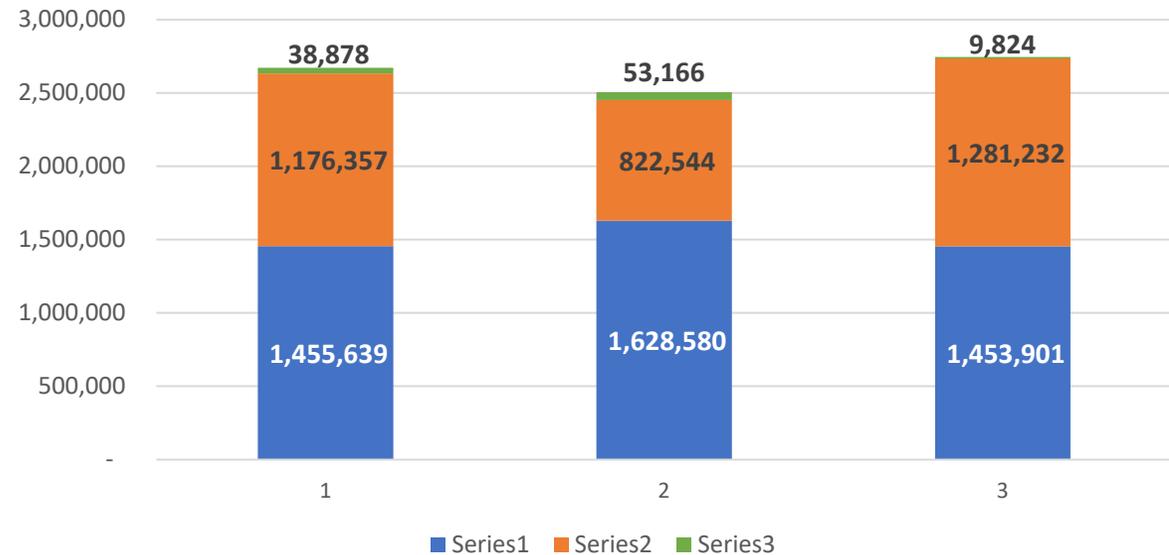
## C&I Portfolio:

- Incentives for gas savings measures in commercial, industrial, sm. business and multifamily sectors
- Direct install programs, Midstream programs, Custom programs
- Sophisticated building management programs

## LMI Portfolio:

- Energy efficiency programs for low- to moderate-income households
- Energy audit-based approach with weatherization upgrades
- Served 2,300 households and 17,601 multifamily units since 2020

Gas Energy Efficiency Savings in MMBTU  
(2020-2023)



Gas Energy Efficiency Savings in MMBTU (2020-2023)	KEDNY	KEDLI	NMPC	Total MMBTU
Residential Portfolio	1,455,639	1,628,580	1,453,901	4,538,120
Commercial & Industrial (C&I) Portfolio	1,176,357	822,544	1,281,232	3,280,133
Low-to-Moderate Income (LMI) Portfolio	38,878	53,166	9,824	101,868
<b>Total</b>	<b>2,670,874</b>	<b>2,504,290</b>	<b>2,744,957</b>	<b>7,920,121</b>

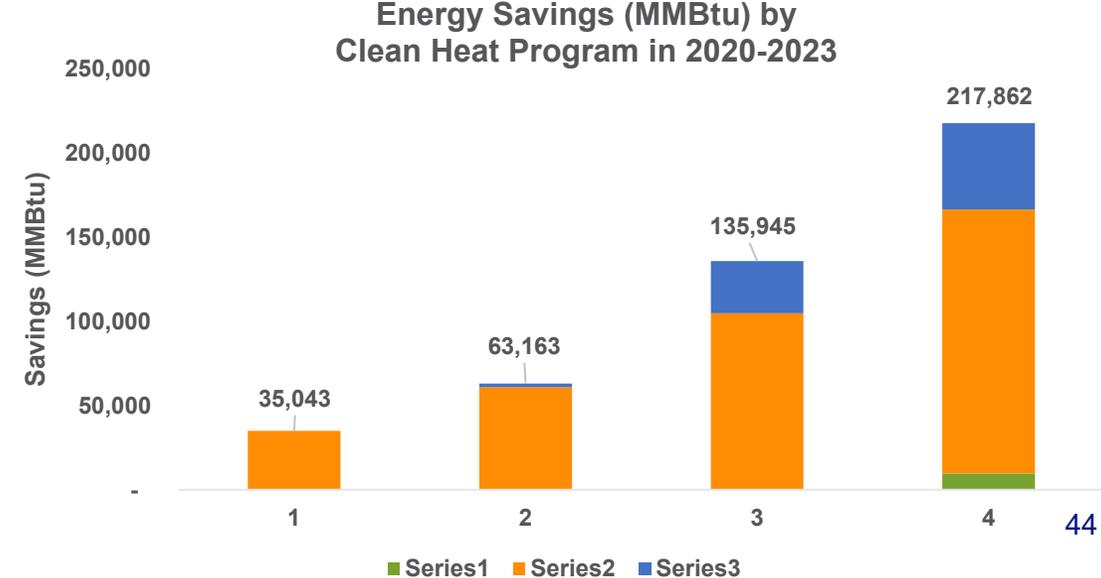
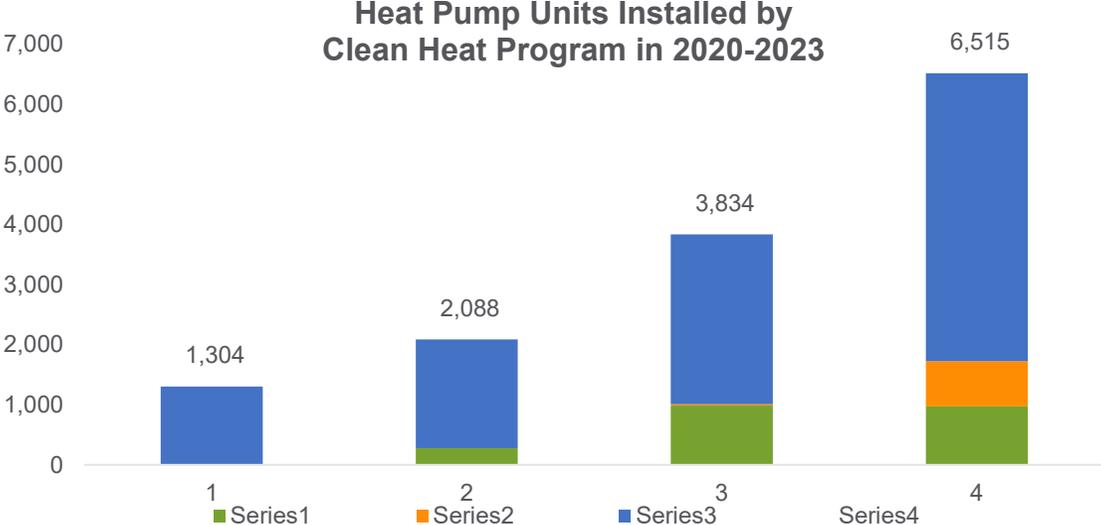
# National Grid’s programs enable customers to install efficient electric heat pumps and reduce their gas consumption

- Part of the NY statewide Clean Heat program funded and administered by electric utilities.
- Offers rebates to UNY customers and contractors to install eligible heat pump equipment for space heating and water heating.

## Highlights

- In 2023, the program achieved its New Efficiency: New York annual energy savings target for the first time with continuing growth projected for 2024 and 2025.
- For residential projects in 2020-2023, approximately 40% are customers converting from natural gas to heat pumps. Of that 40%, roughly half are National Grid NMPC Gas customers and half are customers of other gas utilities.
- For commercial projects in 2020-2023, approximately 80% are customers converting from natural gas to heat pumps. Of that 80%, roughly half are National Grid NMPC Gas customers and half are customers of other gas utilities.

Since it only a gas utility in downstate NY, National Grid does not offer heat pump incentives in that region. Instead, heat pump programs are administered there by the local electric utilities, Con Edison and PSEG-LI. National Grid does, however, support those programs by referring all customers who request new or upgraded gas connections to the electric utilities’ heat pump programs and providing those customers with information about heat pumps.



# National Grid's Firm Gas Demand Response (DR) programs are the largest and most comprehensive gas DR programs in the country

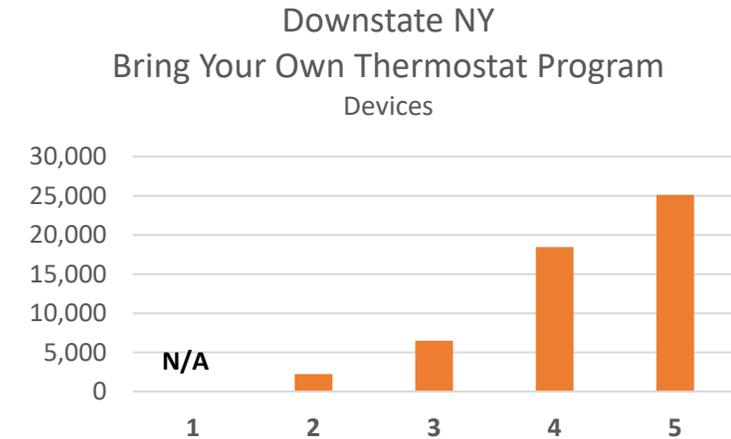
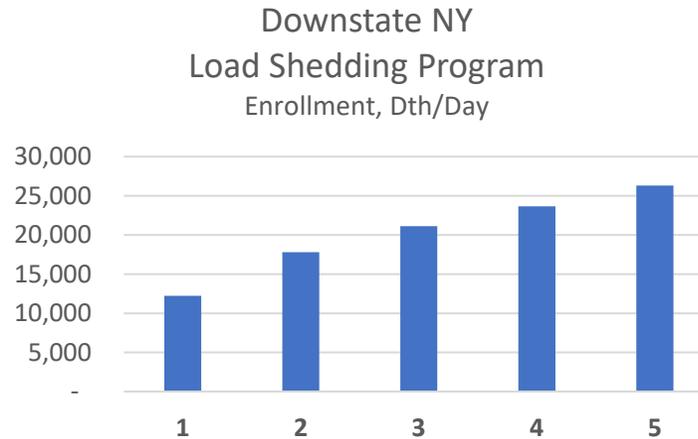
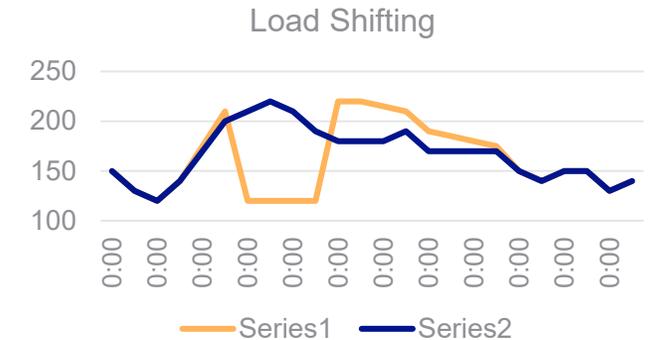
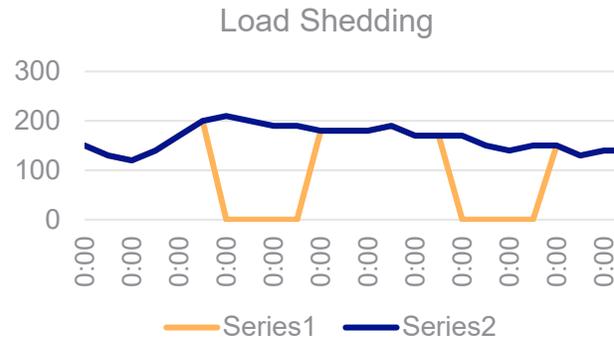
**What is DR:** Incentivized programs for customers who are capable of curtailing or reducing gas usage over a 4 or 8 hour period during a peak winter day.

**Who participates:** Large commercial, industrial and multi-family firm service customers, as well as residential and small business customers.

Last winter season **~450 commercial customers** participated in Gas DR and the Bring Your Own Thermostat program currently has **~32,000 residential and small commercial** devices enrolled in NY.

## How it's valued:

- **Provides critical reliability on peak winter days.**
- Reduces supply requirements.
- Flexible resource that can be called upon to reduce peak load during system emergencies.
- Gas DR plays a unique role in the clean energy transition, by lowering peak usage and helping defer the build out of new gas infrastructure, and associated emissions.



**DNY Program enrollment on Nov 1 for each winter season**

# National Grid is committed to evolving our NPA program to increase opportunities and customer adoption across New York

We are incorporating feedback and lessons learned from customers, regulators, stakeholders, and peer utilities.



## ➤ Three categories of NPAs

- Main Extensions
  - Encouraging customers requesting a connection to the gas system to adopt an alternative instead
- LPP Replacement
  - Encouraging customers who already have a gas connection to disconnect from the gas system
- Peak Gas Demand Reduction
  - Encouraging customers who already have a gas connection to reduce gas usage or to disconnect from the gas system



## ➤ NPAs are not possible without customer adoption

- NPAs are not a technology. Instead, they are a source of incentives for existing tech (e.g. heat pumps)
- Recent KEDNY/KEDLI Joint Proposal outlined our proposed changes to outreach to increase customer awareness, education, and, hopefully, adoption



- NPA website
- Emails
- Postcards/Letters
- Community Events
- Door Knocking
- Contractor Education

# 08

## Billing Components



**Kellie Smith**  
**Director**  
**Pricing**

# Components of Billing



SERVICE FOR



BILLING PERIOD

Mar 14, 2024 to Apr 15, 2024

PAGE 2 of 3

ACCOUNT NUMBER



PLEASE PAY BY

May 9, 2024

AMOUNT DUE

\$ 121.00

## What are the components of a typical monthly gas utility bill?

1. Basic Service Charge
2. Base Delivery Charge (by usage block)
3. Surcharges
4. Billing Charge
5. Supply Charges (“pass through” charges, subject to market price volatility)
6. Taxes

### Enrollment Information

To enroll with a supplier or change to another supplier, you will need the following information about your account:

Acct No: [Redacted] Cycle: [Redacted]

### Gas Usage History

Month	Therms	Month	Therms
Apr 23	110	Nov 23	59
May 23	42	Dec 23	131
Jun 23	13	Jan 24	185
Jul 23	12	Feb 24	186
Aug 23	09	Mar 24	157
Sep 23	09	Apr 24	116
Oct 23	16		

**Choosing an Energy Supplier** You can choose who supplies your energy. No matter which energy supplier you choose, National Grid will continue to deliver energy to you safely, efficiently and reliably. We will also continue to provide your customer service, including emergency response and storm restoration. National Grid is dedicated to creating an open energy market that lets you choose from a variety of competitive energy suppliers, who may offer different pricing options. For information on authorized energy suppliers and how to choose, please visit us online at [ngrid.com/li-energychoice](http://ngrid.com/li-energychoice)

### DETAIL OF CURRENT CHARGES

#### Delivery Services

Service Period	No. of days	Current Reading	-	Previous Reading	=	Measured CCF	x	Therm Factor	=	Therms Used
Mar 14 - Apr 15	32	1545 Actual		1432 Actual		113		1.02993		116

METER NUMBER 01317757 NEXT SCHEDULED READ DATE ON OR ABOUT May 15

RATE Rate 140 Gas Residential Home Heating

Basic Service Charge (including first 3.2 therms)	23.10
Next 50.1 Therms	1.3528 x 50.1 therms 67.78
Over/Last 62.7 Therms	0.3185 x 62.7 therms 19.97
Delivery Rate Adj	0.11929854 x 116 therms 13.83
Billing Charge	1.32
NY State and Local Surcharges	5.96
NY State Sales Tax	4.5 % 5.94
<b>Total Delivery Services</b>	<b>\$ 137.90</b>

#### Supply Services

SUPPLIER National Grid

Gas Supply	0.46166997 x 116 therms 53.54
NY State and Local Surcharges	1.39
NY State Sales Tax	4.5 % 2.47
<b>Total Supply Services</b>	<b>\$ 57.40</b>

# 09

## Utility Emissions

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Patricia Dorsch  
Director  
NY Environmental Sustainability

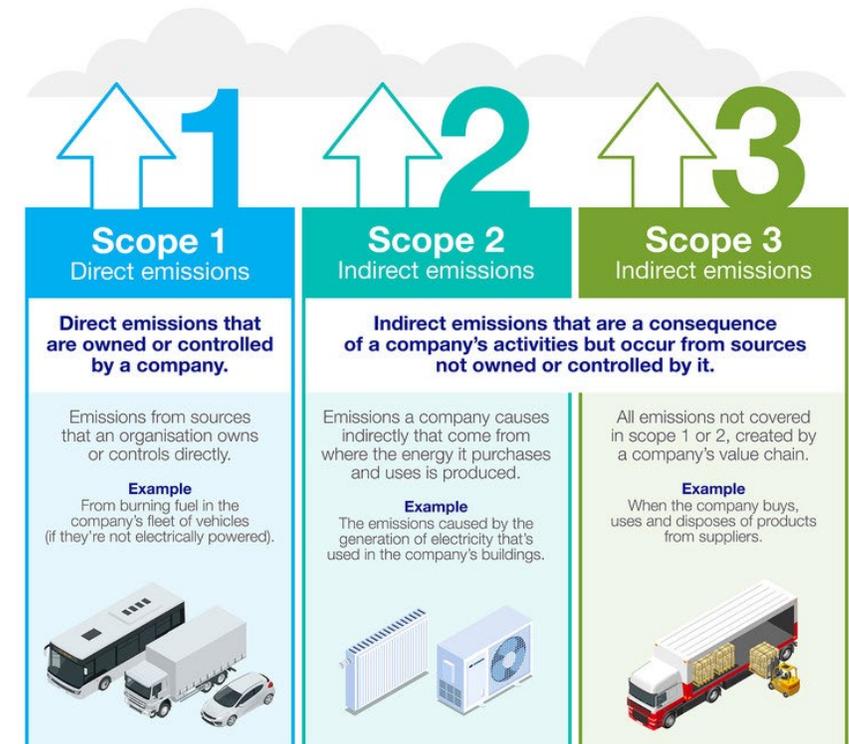
# Greenhouse Gas (GHG) Emissions Classification

GHGs are placed into three (3) classifications: Scope 1, Scope 2, and Scope 3.

- **Scope 1 – emissions from sources that a company owns or controls directly**
  - Ex. leakage from gas pipelines and customer meters
- **Scope 2 – emissions a company caused indirectly from energy purchased**
  - Ex. emissions from the use of purchased electricity in our office buildings
- **Scope 3 – emissions a company is indirectly responsible for from its value chain**
  - Ex. emissions from customers combusting gas we sell

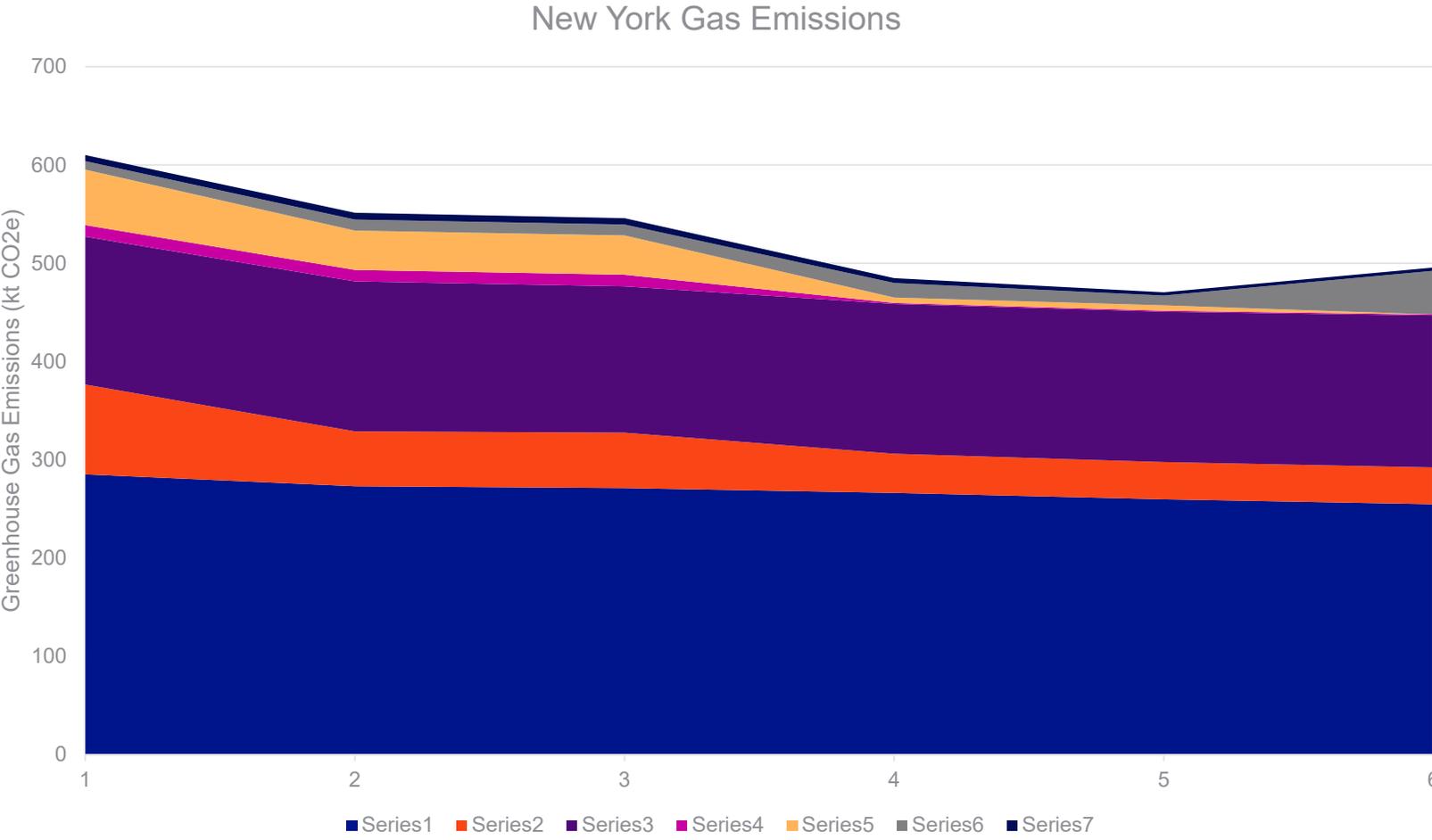
## What are Scope 1, 2 and 3 carbon emissions?

The three scopes are a way of categorising the different types of greenhouse gas emissions created by a company, its suppliers and its customers.



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# Since 2018, our NY Scope 1 gas emissions have decreased by almost 19%.



# Current Status of JU and DPS Efforts

- ✓ **Draft Emissions inventory reporting proposal by JU**
  - Submitted 12/1/2022 under Case 22-M-0149
- ✓ **Supplement to draft emission 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:**

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

**All filed comments to date:**

**[NYSDPS-DMM: Matter Matter for Case 22-M-0149](#)**

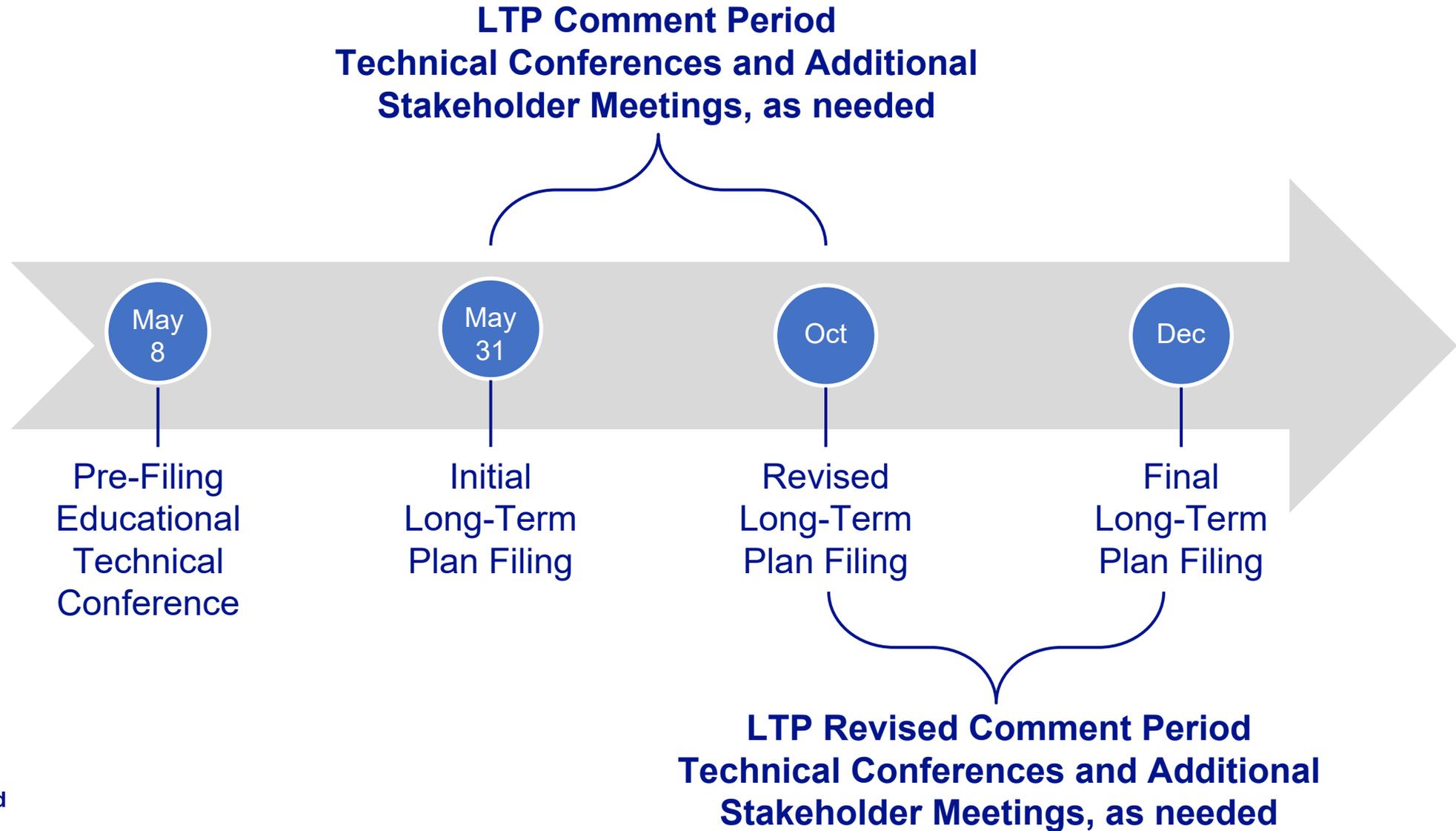
# 10

## Next Steps



MaryBeth Carroll  
Director  
Gas Scenario Planning

# Process Timeline



# How to Engage

For more information, please visit [ngrid solutions.com](http://ngrid solutions.com)

- All informational sessions and technical conference slide decks will be posted on the website.

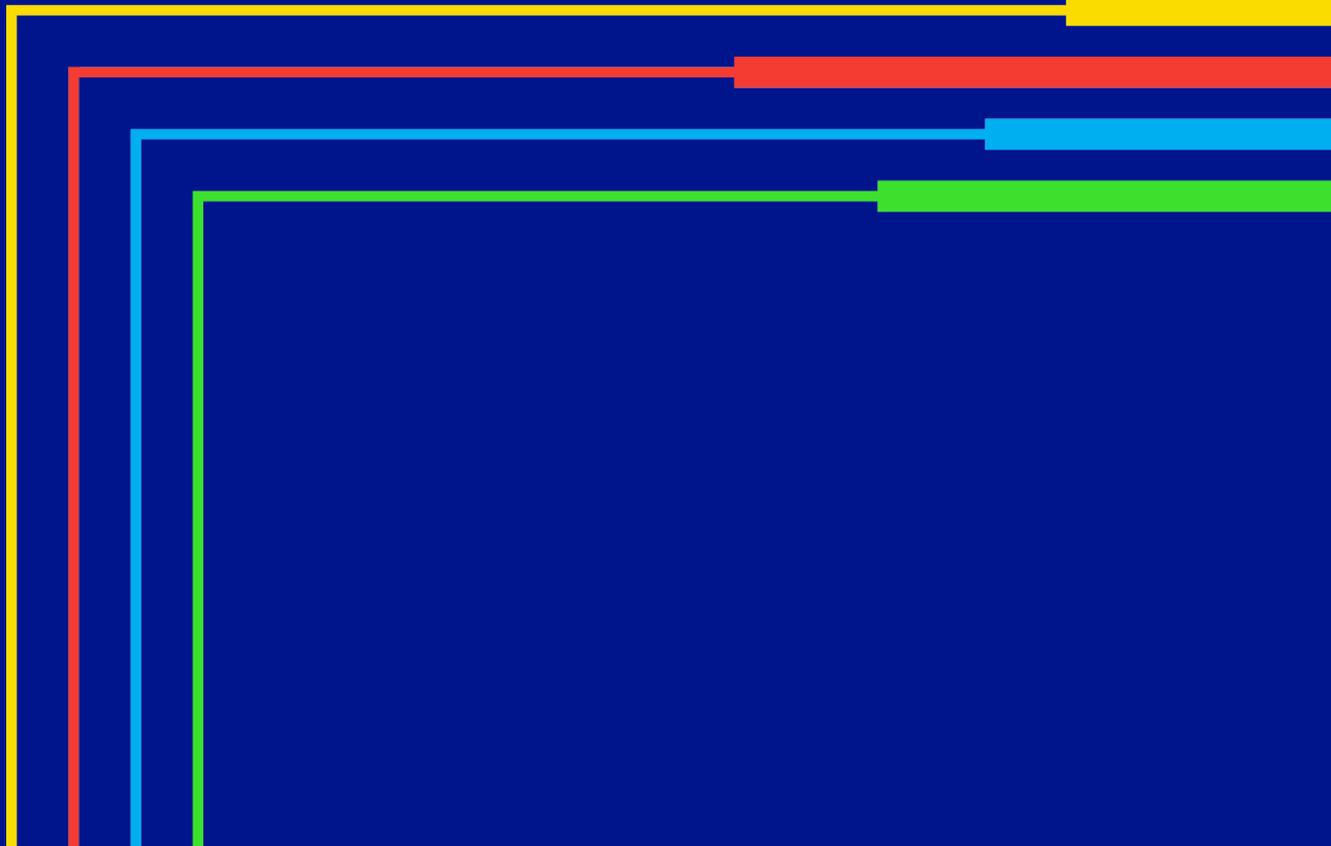


# Q&A

Please use the “raise hand” feature of the meeting platform for any questions.

We will answer questions in the order they are received.

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