



National Fuel[®]

SAFE. RELIABLE. AFFORDABLE. SUSTAINABLE.

Table of Contents

Glossary	5	Risk Oversight and Risk Management.....	28
Letter to Stakeholders	8	Risk Oversight.....	28
Executive Summary	11	Risk Management.....	29
Report Overview and Highlights.....	12	Risk Management – Business Continuity Planning.....	30
Company Overview	13	Management of Environmental Legal and Regulatory Risks.....	30
Our Guiding Principles.....	14	Management of Climate-Related Risk and Climate Strategy.....	31
Corporate Responsibility Highlights.....	15	Our Employees and Communities	42
Governance and Risk Oversight	19	Human Capital Management.....	44
Strong Corporate Governance Practices.....	21	Culture Focused on Safety and Engagement.....	44
Board Diversity and Independence.....	21	Human Capital Management – Employee Attraction and Retention.....	45
Investment Community/ESG Engagement.....	23	Diversity and Inclusion	47
Leadership and Governance – Business Ethics.....	23	Employee Resource Groups.....	50
Governance – Political Advocacy.....	25	Supplier Diversity	56
Governance – Information Security.....	25	Human Capital – Labor Practices.....	57
Governance of Corporate Responsibility, Sustainability, and Climate Risk.....	26		

Serving our Communities Serving and Customers	58	Safety Leadership	105
Serving Our Customers	58	OSHA Rate.....	107
Serving Our Communities.....	60	Distribution, Service, and Transmission Pipeline Data.....	108
Our Environmental Justice Focus	64	Reportable Pipeline Incidents, Corrective Action Orders and Notices of Probable Violations	108
Downstream Segment	65	Activity Metrics	109
Greenhouse Gas Emissions.....	67	Midstream Segment	110
Ecological Impacts.....	69	Greenhouse Gas Emissions.....	112
Waste Management	69	Air Quality.....	118
Energy Affordability	73	Ecological Impacts.....	119
External Factors Impacting Affordability	74	Operational Safety, Emergency Preparedness and Response	130
Average Retail Gas Rates	81	Industry Focused on Safety With Respect to Energy Transition	135
End-Use Efficiency	84	Activity Metrics	140
Percentage of Gas Utility Revenues from Decoupled Rate Structures	87		
Integrity of Gas Delivery Infrastructure.....	88		
Customer Safety.....	91		
System Safety	98		

Upstream Segment	141
Business Transactions Impacting Future Disclosures.....	143
Achievement of Responsible Natural Gas Production Certifications.....	143
Greenhouse Gas Emissions.....	144
Air Quality.....	150
Water Management.....	152
Biodiversity Impacts.....	155
Workforce Health and Safety.....	159
Engagement Processes and Due Diligence Practices with Respect to Human Rights, Indigenous Rights and Operations in Areas of Conflict.....	161
Community Relations.....	161
Reserves Valuation and Capital Expenditures.....	162
Critical Incident Management.....	163
Activity Metrics.....	164

Appendix A – Index of Sustainability

Reporting Topics, by Segment	166
TCFD.....	166
Governance.....	167
Downstream Segment.....	167
Midstream Segment.....	167
Upstream Segment.....	168

Appendix B – Consolidated Data Tables

Downstream Segment.....	169
Midstream Segment.....	171
Upstream Segment.....	173

Appendix C – Independent Third-Party

Verification of Emissions Data	175
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Glossary of Terms

Frequently used abbreviations, acronyms, or terms used in this report:

National Fuel Gas Companies

Company	National Fuel Gas Company and its subsidiaries its subsidiaries as appropriate in the context of the disclosure.
Distribution Corporation	National Fuel Gas Distribution Corporation
Downstream Segment	Downstream operations carried out by Distribution Corporation
Empire	Empire Pipeline, Inc.
Foundation	National Fuel Gas Company Foundation
Highland	Highland Field Services, LLC
Midstream Company	National Fuel Gas Midstream Company, LLC
Midstream Segment	Midstream operations carried out collectively by Supply Corporation, Empire and Midstream Company
National Fuel	National Fuel Gas Company
Seneca Resources	Seneca Resources Company, LLC
Supply Corporation	National Fuel Gas Supply Corporation
Upstream Segment	Upstream operations carried out by Seneca Resources

Regulatory Agencies

CalGEM	California Geologic Energy Management Division
CARB	California Air Resources Board
DCNR	Pennsylvania Department of Conservation and Natural Resources
DOT	United States Department of Transportation
EPA	United States Environmental Protection Agency
FERC	Federal Energy Regulatory Commission
NYNHP	New York Natural Heritage Program
NYPSC	New York Public Service Commission
NYSDEC	New York State Department of Environmental Conservation
NYSERDA	New York State Energy and Research Development Association
PADEP	Pennsylvania Department of Environmental Protection
PAF&BC	Pennsylvania Fish and Boat Commission
PaPUC	Pennsylvania Public Utility Commission
PGC	Pennsylvania Game Commission
PHMSA	Pipeline and Hazardous Materials Safety Administration
OSHA	Occupational Health and Safety Organization
SEC	Securities and Exchange Commission
SHPO	State Historic Preservation Office
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service

Other

AGA	American Gas Association	Code	Company's Code of Business Conduct
API	American Petroleum Institute	COVID-19	Novel coronavirus
AXPC	The American Exploration and Production Council	CQMS	Construction Quality Management System
BAT	Best available technology	DIMP	Distribution Integrity Management Program
Bbl	Barrel (of oil)	EDM	Engineering Design Manual
Bcf	Billion cubic feet (of natural gas)	EHS	Environmental, health and safety
Bcfe (Mcf) – represents	The total heat value (Btu) of natural gas and oil expressed as a volume of natural gas.	EIA	United States Energy Information Administration
Bcf (or Mcf) equivalent	The Company uses a conversion formula of 1 barrel of oil = 6Mcf of natural gas.	ERM	Enterprise Risk Management
BMP	Best management practice	ESCAMP	Erosion and Sedimentation Control and Agricultural Mitigation Procedure
Capital expenditure	Represents additions to property, plant, and equipment, or the amount of money a company spends to buy capital assets or upgrade its existing capital assets.	ESA	Environmental Site Assessment
CCAA	Nationwide Candidate Conservation Agreement with Assurances	ESG	Environmental, social, and governance disclosures
CCUS	Carbon capture utilization and storage	GHG	Greenhouse Gas
CIP	Conservation Incentive Program	GHGRP	United States EPA's Greenhouse Gas Reporting Program
CISSC	Corporate Information Security Steering Committee	GRI	Global Reporting Initiative
CLCPA	New York Climate Leadership and Community Protection Act, or Climate Act	HCA	High consequence area
		HFCs	Hydrofluorocarbons
		IFC	International Finance Corporation
		ILO	International Labor Organization
		InfoSec	Information security

INGAA	Interstate Natural Gas Association of America	RACT	Reasonably Available Control Technology
IPCC	Intergovernmental Panel on Climate Change	RCA	Root Cause Analysis
LiDAR	Light Detection and Ranging	RDM	Revenue Decoupling Mechanism
LDAR	Leak Detection and Repair	ROW	Right-of-way
LIHEAP	Low Income Home Energy Assistance Program	RNG	Renewable Natural Gas
LIURP	Low Income Usage Reduction Program	SASB	Sustainability Accounting Standards Board
MAOP	Maximum allowable operating pressure	SME	Subject Matter Expert
MFC	Merchant Function Charge	SMS	Safety Management System
MSC	Marcellus Shale Coalition	STIMP	Storage Integrity Management Program
MMcf	One million cubic feet	TCFD	Task Force on Climate-Related Financial Disclosures
NGSI	National Gas Sustainability Initiative	TIMP	Transmission Pipeline Integrity Management Program Plan
NMFR	Near-miss frequency rate	TRIR	Total recordable incident rate
NRCIP	Non-Residential Rebate Program	VOC	Volatile organic compound
PFCs	Perfluorocarbons	WNA	Weather normalization adjustment
PM ₁₀	Particulate matter	WEO	World Energy Outlook
PNDI	Pennsylvania Natural Diversity Inventory		
PNHP	Pennsylvania Natural Heritage Program		
PSE	Process safety event		
PSMS	Pipeline Safety Management Systems		
PPE	Personal protective equipment		



Dear Stakeholder,

Thank you for taking the time to read National Fuel Gas Company's 2022 Corporate Responsibility Report ("Report"). This Report builds on our previous disclosures, highlighting the Company's efforts to continue enhancing its environmental, social and governance initiatives, and our commitment to the sustainable and responsible production, storage, transportation, and distribution of natural gas. Across our organization, we remain driven by our guiding principles of Safety, Environmental Stewardship, Community, Innovation, Satisfaction and Transparency. Consistent with our more than 120-year operating history, National Fuel has maintained its focus on safely, reliably, and affordably providing critical energy supplies to consumers. Additionally, we remain focused on efforts to reduce our carbon footprint and build a culture focused on safety and diversity.

Our Important Role in the Energy Future

I firmly believe that natural gas will continue to play a critical role in the energy ecosystem as we work toward a lower carbon future. As a safe, abundant, domestically produced, readily dispatchable, and affordable energy solution, natural gas provides an excellent complement to renewable energy, while supporting state and federal climate objectives. I strongly support a rational and measured "all-of-the-above" approach to the energy transition that leverages reliable and resilient natural gas infrastructure to transport energy supplies to our communities. This approach will importantly maintain energy reliability and affordability for consumers.

Reliability

The reliability of our natural gas system was more apparent than ever in the multi-day winter storm that Western New York experienced in December 2022. Despite incredibly harsh winter weather conditions, with maximum wind gusts reaching 79 mph, 50.3 inches of snowfall, and sustained temperatures below 5 degrees (Fahrenheit), our dedicated and talented workforce safely operated the business which resulted in minimal customer outages. In addition, our Pipeline & Storage business met firm storage and transportation service obligations with near 100% reliability during calendar year 2022, providing dependable service to customers, including natural gas utilities, during peak winter conditions when they and their customers needed it the most. Similarly, despite periods of severe winter weather, our Exploration & Production and Gathering businesses experienced limited operational impacts in 2022, illustrating the integrity and reliability of our facilities.

Sustainability

National Fuel continues to make significant investments to ensure the long-term safety, reliability and integrity of our system and assets. In addition, we continue to take significant decarbonization steps through further system modernization, best management practices, and embracing new and emerging technology, all with the goal of achieving the emissions reduction goals that we've established. Some of our 2022 accomplishments include:

- **Making Progress Toward Emissions Reduction Targets:** Our subsidiaries made further progress toward their methane intensity reduction targets, with progress to date ranging from 8.3% to 27.4%, as compared to 2020 baselines.



National Fuel has maintained its focus on safely, reliably, and affordably providing critical energy supplies to consumers.



David P. Bauer
President and Chief Executive Officer

- **Responsibly Sourced Natural Gas Production:** Our Upstream Segment successfully completed the annual re-verification process required to maintain certification of 100% of our natural gas production under Equitable Origin's EO100™ Standard for Responsible Energy Development. In addition, our Upstream Segment achieved certification of 100% of its Appalachian natural gas production under the MiQ Standard for Methane Emissions Performance at the highest certification level, an "A" grade.
- **Emissions Reduction Programs:** In 2022, Supply's FM100 project entered its first full year of operations. This project, which incorporates best-in-class emissions controls, such as vent gas recovery, is a great example of how we can expand our pipeline system while at the same time reduce the methane intensity of our operations.
- **Energy Conservation Efforts:** In New York, our Downstream Segment's Conservation Incentive Program ("CIP") continued to drive end-use emissions reductions. Since inception, the program is responsible for a cumulative total reduction of approximately 1.5 million metric tons of carbon dioxide emissions. The CIP is comprised of various programs designed to reduce our customers' energy usage, including a residential and non-residential rebate program, outreach, and education.

Building a Culture Focused on Safety and Inclusion

Safety is a core value and guiding principle at National Fuel. We value the safety of our customers, employees, and communities, and work diligently to ensure that safety is embedded into everything we do across our integrated businesses. Throughout this Report, you will see the numerous ways in which safety is an integral part of our day-to-day operations. I am proud of the safety culture that we have built, and strongly believe that our steadfast commitment to our well-established and robust safety programs will allow us to continue to safely and reliably serve our customers.

Additionally, the Company recognizes that building a diverse and inclusive workforce is critical to our long-term success. Improving diversity in the workplace continues to be a focus of the Company. In 2022, we undertook several steps in this area, including implementing diversity-focused recruitment initiatives, offering diversity and inclusion training for employees, and fostering inclusion through the support of our various employee resource groups. The Company also recognizes the importance of supplier diversity, and in 2022, we took steps to ensure that diversity is considered when identifying and on-boarding our suppliers.

National Fuel, supported by its dedicated and talented workforce, has an outstanding history of safely and reliably producing, transporting and delivering natural gas to the communities we serve. Looking forward, our strong safety culture and continued focus on the sustainability and reliability of our operations, combined with our commitment to continuous improvement across the entire organization, positions us well for future success. We look forward to further reporting on our progress in the coming years.



David P. Bauer

President and Chief Executive Officer



Executive Summary



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Report Overview and Highlights

This Report provides discussion and analysis of National Fuel's ESG metrics, the Company's management of those metrics, and the programs and policies in place to achieve National Fuel's commitment to the safe and environmentally conscious operation of its business. The Report includes updated ESG disclosures from January 1–December 31, 2022, and as appropriate, significant developments that have occurred since the end of this reporting period.

Disclosures within the Report are aligned with the Sustainability Accounting Standards Board (SASB) framework for each of National Fuel's principal business Segments, referred to within the Report as the Company's Downstream, Midstream, and Upstream segments, respectively, as well as certain disclosures under the Global Reporting Initiative ("GRI") standards. Additionally, in line with National Fuel's commitment to continuously improving our corporate responsibility and sustainability initiatives, including our ESG disclosures, the Report builds on our previous disclosures to include supplemental information in line with the TCFD framework, and enhances our emissions, and diversity and inclusion-focused, disclosures. A detailed listing of the location of the Company's ESG disclosures within this Report, by framework and subject area, is located in the Appendix.

Report



GRI-Referenced Standards

- Governance and Social metrics

SASB

- Downstream (Gas Utilities and Distributors)
- Midstream (Oil & Gas – Midstream)
- Upstream (Oil & Gas – Exploration & Production)

TCFD

- Governance of sustainability
- Strategy concerning potential impacts of climate-related risks and opportunities and resiliency of our strategy under climate-related scenarios
- Risk management process to identify, assess and manage climate-related risks
- Metrics and targets used to assess and manage climate-related risks and opportunities

Report Highlights

The Company is committed to continuously improving our corporate responsibility initiatives. Our Report builds on past disclosures with a focus on:

- Climate-related risks, opportunities and resiliency
- Progress towards emissions targets and sustainability initiatives related to emissions reductions
- Waste management program and metrics
- Internal audit review prior to publication
- Independent third-party verification of emissions data ([Appendix C](#))

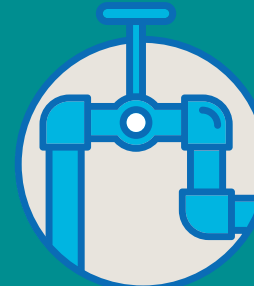
Company Overview

National Fuel is a holding company organized under the laws of the state of New Jersey and headquartered in Western New York. The Company is a diversified energy company engaged principally in the onshore production, gathering, transportation, and distribution of natural gas. The Company operates an integrated business, with assets centered in Western New York and Pennsylvania, being used for, and benefiting from, the production and transportation of natural gas from the Appalachian basin. Current natural gas production development activities are focused in the Marcellus and Utica shales, geological shale formations that are present nearly a mile or more below the surface in the Appalachian region of the United States. Pipeline development activities are designed to gather, store and transport natural gas production to new and growing markets. The common geographic footprint of the Company's subsidiaries enables them to share certain management, labor, facilities, and support services across various businesses and pursue coordinated projects designed to produce and transport natural gas from the Appalachian basin to markets in the eastern United States and Canada. The Company previously developed and produced oil reserves, primarily in California, prior to the divestiture of these assets on June 30, 2022. The Company reports financial results for four business segments: Exploration and Production, Pipeline and Storage, Gathering, and Utility.



Downstream

National Fuel Gas Distribution Corporation ("Distribution Corporation" or "Downstream Segment"), a New York corporation, carries out the Company's Utility operations. Distribution Corporation provides natural gas utility services to approximately 754,000 customers through a local distribution system located in Western New York and northwestern Pennsylvania. The principal metropolitan areas served by Distribution Corporation include Buffalo, Niagara Falls and Jamestown, New York and Erie and Sharon, Pennsylvania.



Midstream

The Company's Midstream operations are carried out by the Company's Pipeline & Storage and Gathering subsidiaries (collectively the "Midstream Segment"). National Fuel Gas Supply Corporation ("Supply Corporation"), a Pennsylvania corporation, and Empire Pipeline, Inc. ("Empire"), a New York corporation, carry out the Company's Pipeline & Storage operations. Supply Corporation and Empire provide interstate natural gas transportation and storage services through integrated gas pipeline systems in Pennsylvania and New York. Wholly-owned subsidiaries of National Fuel Gas Midstream Company, LLC ("Midstream Company"), a Pennsylvania limited liability company, carry out the Company's Gathering operations. Through these subsidiaries, Midstream Company builds, owns, and operates natural gas gathering and compression facilities in the Appalachian region.



Upstream

Seneca Resources Company, LLC ("Seneca"), a Pennsylvania limited liability company, carries out the Company's Exploration & Production operations. Seneca is engaged in the exploration for, and the development and production of, natural gas in the Appalachian region of the United States.

Our Guiding Principles

National Fuel understands that to deliver long-term sustainable value for the benefit of stakeholders – shareholders, employees, customers, and communities where we operate – we must continue to conduct our business activities in a way that promotes our six guiding principles. These principles underpin all aspects of our operations, as well as our daily interactions with our stakeholders.



Safety

We value the safety of all our customers, employees and communities, and work diligently to establish a culture of safety that is embraced throughout the entire organization.



Environmental Stewardship

Environmental protection and conservation of resources are high priorities for National Fuel. We utilize procedures, technologies, and best management practices across our businesses to develop, build, and operate our assets in a manner that respects and protects the environment.



Community

We are committed to the health and vitality of the local communities where we operate. We work where we live and raise our families, and are constantly focused on the highest standards of corporate responsibility and accountability.



Innovation

We strive to exceed the standards for safe, clean and reliable energy development, embracing new technologies and investing in the future of our regions' energy resources. We envision a long and healthy future for our Company.



Satisfaction

We work to deliver reliable, high-quality service for our customers. We want our shareholders to see a strong return on their investment. We want our employees to work in a positive, safe and rewarding environment. We want our communities to be proud to call us neighbors.



Transparency

We believe that open communication is key to maintaining strong relationships. We see value in educating our shareholders, employees, customers and communities about all aspects of our business.

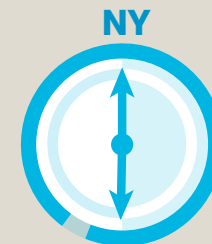
SAFE. National Fuel's number one priority is the safety of our customers, employees and communities where we operate. We continuously focus on system integrity, making natural gas a safe, viable option for our customers.

Continually Strengthening Our Safety Culture

- Aggressive System Modernization Program
- Leak Management Program
- Comprehensive Integrity Management Program
- Customer Outreach and Education on Safety
- Rapid Emergency Response
- Accelerated Leak Surveys
- Damage Prevention Programs
- Pipeline Safety Management System
- Employee and Contractor Training and Qualification
- Safety Culture Programs



2022 Utility Emergency Response Time



92% of emergency calls responded to within 30 minutes



98% of emergency calls responded to within 45 minutes

RELIABLE. Given our weather-hardened infrastructure, natural gas remains a reliable and resilient option for our customers at all times of the year.



- ✔ Distribution Corporation had minimal customer (~15) outages while battling more than 50" of snow over 4 days.
- ✔ Midstream Segment had near 100% reliability during fiscal year 2022 and served peak demand without incident.
- ✔ Upstream Segment kept production flowing in sub-zero temperatures during Winter Storm Elliott.

AFFORDABLE.

Distribution Corporation remains #1 in affordability for its New York and Pennsylvania service territories compared to other companies in each state.

Focus on Affordability



New York

#1 State Rates
(out of 8 Utilities)
Northeast – #1 Rates
(out of 26)

#1 State Rates
(out of 6 Utilities)
Northeast – #3 Rates
(out of 26)

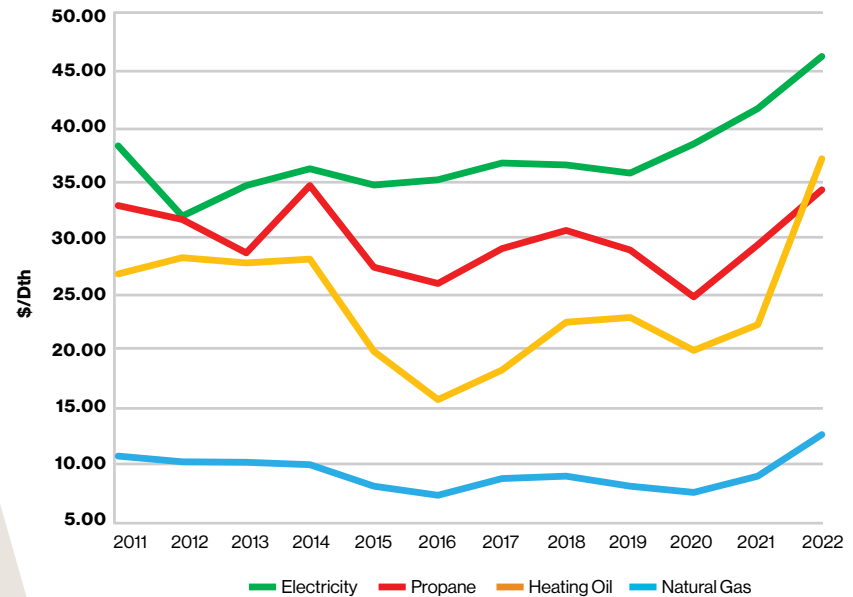


Pennsylvania

Since 2009, the average retail residential customer in New York and Pennsylvania has seen a decrease of \$250 and \$402, respectively, on their annual natural gas bills.

Affordability of Natural Gas

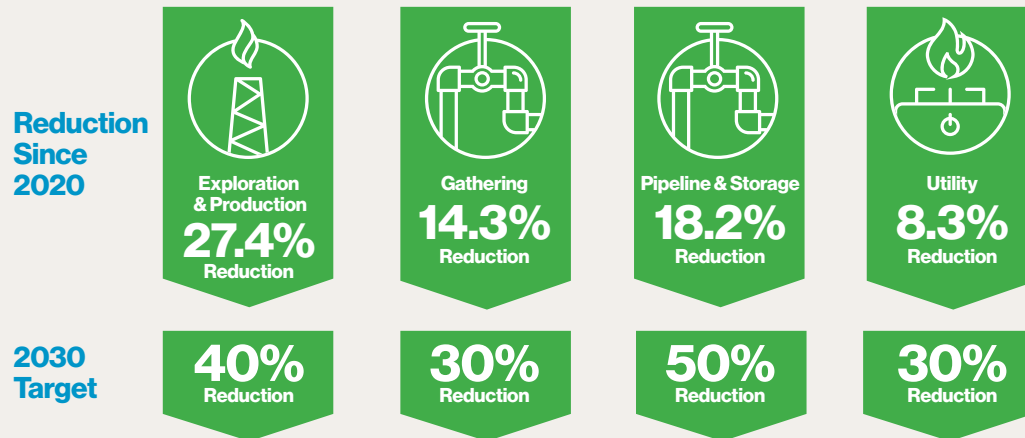
Combined Service Territory Average Residential Rates
2011-2022 \$/Dth Equivalent



SUSTAINABLE.

We believe natural gas remains an integral part of the transition to a low-carbon economy. As we continue analyzing potential decarbonization actions, National Fuel is committed to developing responsibly sourced gas, maintaining a safe and sustainable system, and pursuing responsible GHG emissions reduction initiatives.

Methane Intensity Targets



-  Focused on driving emissions reductions through new initiatives and technologies.
-  Procedures across every segment to protect the environment and mitigate biodiversity impacts.
-  Committed to reducing waste quantities generated throughout our operations.



Governance and Risk Oversight



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“

We believe in strong corporate governance practices that promote transparency, accountability and the highest ethical standards for the benefit of shareholders and all stakeholders, and to ensure the long-term success of the Company.”

”

Michael Reville
General Counsel and Secretary of National Fuel Gas Company



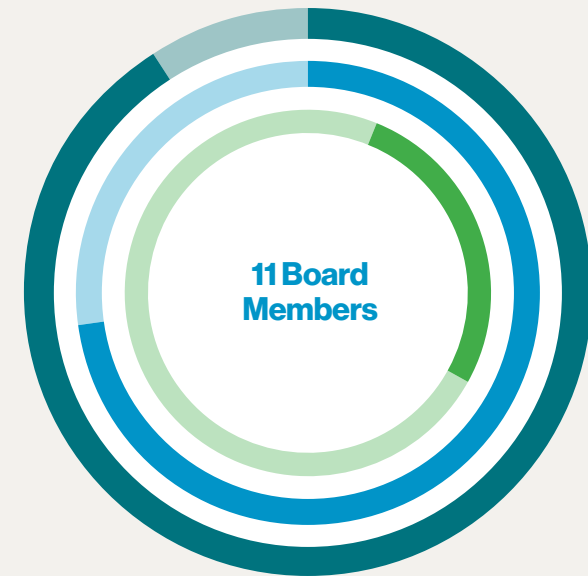
The Company's strong corporate governance measures go hand-in-hand with our guiding principles of satisfaction and transparency. National Fuel's employees, managers and officers conduct the Company's business under the oversight of the Board of Directors to serve the long-term interests of the Company's shareholders and meet the needs of its customers. The Board has a fiduciary duty to oversee the management of the Company's operations and risks related thereto and to uphold those shareholder interests. The Board and Company management recognize that the long-term interests of shareholders are served by considering the interests of customers, employees and the communities in which we operate.

Strong Corporate Governance Practices

Our Diverse, Experienced and Independent Board of Directors

The Company's Board of Directors consists of individuals with diverse and extensive leadership experience within the energy industry, as well as complementary industries, including manufacturing and consulting. In addition, the Company's Board has meaningful energy transition and energy technology expertise, along with substantial safety, operational, regulatory and compliance-related experience. The Company believes that it is important for the make-up of the Board to reflect a diversity of experience related to the Company's business segments in which it operates, as well as a diversity of perspectives brought to the Board by the individual members.

Diverse and Independent Board of Directors¹



Board Independence
91% independent

Board Tenure
73% with more than 5 years of service

Board Diversity
27% diverse
Includes gender and racial/ethnic diversity.

- Designated Lead Independent Director
- Separate roles of Chairman of the Board and Chief Executive Officer
- Average director tenure less than 8 years
- Moving to Annual Election of Directors

¹ The graph reflects the current makeup of the Company's Board of Directors as of September 1, 2023. In accordance with the NYSE Listed Company Manual, the Company does not consider a director independent if he or she is, or has been within the last three years, employed as an executive officer of the Company.

Focused on Board Diversity

National Fuel's Nominating/Corporate Governance Committee, chaired by Rebecca Ranich, makes recommendations to the full Board on nominees for director positions, and has invited qualified diverse candidates to stand for election to the Board with successful results, as 3 of the last 6 directors who were added to the Board are diverse. Although currently at a full complement of directors, when vacancies arise in the future, the Company will continue to focus on diversity.

Inclusion of the "Rooney Rule"

The Company's Corporate Governance Guidelines incorporate the "Rooney Rule." As a result, when identifying independent director candidates for nomination to the Board, the Nominating/Corporate Governance Committee is committed to including in any initial candidate pool qualified racially, ethnically and/or gender diverse candidates.

Diverse and Extensive Board of Directors Experience



Investment Community/ESG Engagement

In line with the Company's guiding principle of transparency, National Fuel believes that continued engagement with stakeholders is key to maintaining positive relationships and strong corporate governance practices.

Members of Company management, including members of the Company's Corporate Responsibility Executive and Management Committees, periodically engage with shareholders and proxy advisory firms throughout the year, including in advance of the Company's proxy season, to obtain feedback on matters of interest to them, including ESG matters. The Board has also directed management to continue to engage as appropriate with interested shareholders, and to inform the Board of requests for meetings with its members.

Leadership and Governance – Business Ethics

National Fuel seeks to promote and maintain a culture committed to high standards of ethical conduct and integrity. The Company communicates its expectations for responsible and ethical conduct through our Code of Business Conduct and Ethics (the Code), which is applicable to the Company's Directors, officers and employees. The Code reflects the Company's culture and long-standing commitment to adhere to high standards of ethics and integrity which meet, and frequently exceed, the requirements of law, and is designed to deter wrongdoing and to promote honest and ethical conduct.

Our Engagement Approach

National Fuel's Leadership Team ...

- Executive Leadership
- Senior Management
- Corporate Responsibility Committee Members
- Subject Matter Experts

Regularly Engages with Investment Community Stakeholders ...

- Institutional Investors
- Retail Shareholders
- Proxy Advisory Firms
- ESG Rating Agencies
- Credit Rating Agencies

On Important Operational, Strategic and ESG Topics ...

- Climate/Sustainability
- Human Capital
- Diversity
- Executive Compensation
- Board Composition
- Business Strategy and Operations
- Key Industry Developments

Through Various Forms of Communication ...

- Investor Meetings
- Industry/Analyst Conferences
- Quarterly Earnings Calls
- Investor Relations Website
- Annual Shareholder Meeting
- Annual/Periodic Company Reports and Publications

Driving Further Discussion and Understanding.

- Board and Company management value and consider shareholder feedback
- Engagement allows the Company to address stakeholder comments and further enhance its disclosures and initiatives, where appropriate

Managing Business Ethics Internally

All Company employees share the responsibility for making ethical conduct central to our business operations and dealings.

The Company's internal Ethics Committee, chaired by the Company's Chief Compliance Officer who is also the Company's General Counsel, administers the Code as it relates to Company employees who are not executive officers and regularly reports on its activities to the Audit Committee. The Audit Committee is responsible for administering the Code as it relates to the Company's Directors and executive officers. Additionally, the Audit Committee monitors compliance with the Company's Code and reviews management's response to violations of the Code. Discipline may be imposed for violations of the Code, including, where appropriate, termination of the offending individual's relationship and/or employment with the Company.

The Company's Employee Handbook Policy also explains and elaborates on what is expected of all employees to comply with the Code, and outlines Company policies relating to compliance with laws, rules and regulations on the following topics:

- Insider trading;
- Improper corporate payments, including bribes, kickbacks and/or gifts;
- Political contributions;
- Equal employment opportunity;
- Non-discrimination and anti-harassment;
- Health and safety;
- Environmental compliance; and
- Business records/record retention.

Additionally, on an annual basis, National Fuel takes various steps to ensure compliance with the Code:

- **Annual ethics disclosure:** Officers and supervisory employees are required to provide a personal statement of disclosure relating to any conflicts of interest and any known occurrences of fraud.
- **Availability of anonymous toll-free hotline and dedicated website:** Officers and employees may use the Company's toll-free hotline or dedicated website to anonymously report suspected wrongdoings, possible conflicts of interest or fraud. The same hotline and website are also publicized on the Company's investor relations website, internal intranet and common areas throughout National Fuel's offices. For calendar year 2022, the hotline received seven reports, which included two test reports. Each report was investigated in a timely manner and determined that a violation of the Code of Business Conduct and Ethics did not occur, and in limited cases minor process improvements were implemented.
- **Ethics and compliance training:** The Company requires employees to undergo additional ethics and compliance training with respect to conducting business with government officials including potential actions that could constitute bribery or corruption.

Managing Business Ethics with Our Business Partners

The Company expects its business partners to comply with the standards of conduct set forth in the Code, the [Company's Supplier Code of Conduct Policy](#), [National Fuel's Labor & Human Rights Policy](#) and contractual obligations to National Fuel. The Company sends an annual letter to vendors, suppliers and contractors highlighting the Code, the standards therein, and the Company's expectation that vendors are aware of and comply with those standards (the "Vendor Ethics Letter"). The [Supplier Ethics Letter](#) communicates the Company's

expectation that vendors, suppliers and contractors carefully consider, and comply with, National Fuel's business ethical standards. Among other standards, the Vendor Ethics Letter highlights that National Fuel employees may not, under any circumstances:

- Use their position as a National Fuel representative for personal gain through preferential treatment of vendors, suppliers or contractors;
- Place themselves in a position that compromises their integrity or represents a conflict of their personal interest with National Fuel's interests; or
- Require vendors, suppliers or contractors to participate in or support any group, activity, political campaign or organizations as a requirement of doing business with National Fuel.

The Code of Vendor Conduct communicates to our business partners the Company's expectations that they conduct business with integrity and ensure that their employees, workers, representatives and subcontractors do the same. Among other things, the Code of Vendor Conduct addresses the Company's expectations with respect to the following:

- Code of Business Conduct and Ethics;
- Safety;
- Environment;
- Diversity;
- Labor Practices and Human Rights;
- Information Security; and
- Compliance.

Governance – Political Advocacy

The Company is committed to maintaining the highest ethical standards when engaging in political activity. As the natural gas industry is highly regulated at the local, state and federal levels, the decisions made by policymakers can directly impact all aspects of the Company's operations. National Fuel advocates for policies that benefit our customers, employees, shareholders and the communities we serve. We believe our participation in the political process serves all of our stakeholders' interests by creating a more informed policy-making process. National Fuel's [Political Activities Principles](#) further address the Company's fundamental engagement principles, political contributions program, the Company's political action committees and lobbying activities, membership in organizations, political expenditures, and trade/business association expenditures, including dues allocated to lobbying.

Governance – Information Security

National Fuel believes that strong information security is critical to the Company's success and therefore is committed to continuously reevaluating and strengthening the Company's data privacy and cybersecurity posture. To fulfill this commitment, the Corporate Information Security Steering Committee ("CISSC") meets quarterly to discuss emerging information security risks and the Company's corresponding mitigation and defense efforts. Led by the Company's Chief Information Officer ("CIO") and Chief Information Security Officer ("CISO"), the CISSC is comprised of Information Security (InfoSec) professionals, leadership from key departments and the Company's senior management. The Company's CIO regularly provides information security updates to the Board. Information security risks are also identified and assessed as part of the Company's enterprise risk management program, which the Board is briefed on quarterly.

National Fuel's Information Security Program is aligned to the Cybersecurity Framework published by the National Institute of Standards and Technology. The InfoSec team is dedicated to promoting security awareness through personnel training and regularly reviewing internal information security policies, monitoring for anomalous behavior, investigating potential security events, mitigating vulnerabilities, and assisting business partners with the goal of providing secure and resilient systems. The InfoSec team meets weekly with key Information Technology and Operation Technology leadership to discuss potential cybersecurity threats and review alerts.

Information Security Focus	Company Initiatives
Training & Internal Policies	<ul style="list-style-type: none"> All employees with user access, and contractors with independent system access to Company systems, complete annual information security training InfoSec provides additional training to high-value targets InfoSec reviews and updates company information security and device policies regularly All employees receive at least quarterly security awareness training in the form of malicious email testing (phishing), along with current cyber risk announcements and targeted "bite size" cyber training
External Audits	<ul style="list-style-type: none"> Annually engages Mandiant, an independent cybersecurity consultant, to assess aspects of Company technology Voluntarily participates in one-off assessments focused on different information security issues performed by various U.S. federal agencies: <ul style="list-style-type: none"> - Cybersecurity and Infrastructure Security Agency - Transportation Security Administration - Department of Homeland Security - Federal Energy Regulatory Commission (FERC) Annually performs New York Public Service Commission (NYPSC) review of third party attestation as it relates to Case 13-M-0178 (protection of personally identifiable customer information)
Information Security Breaches	<ul style="list-style-type: none"> Performs ongoing comprehensive investigations of our systems, and to the best of our knowledge the Company has not experienced an information security breach to its systems within the last four years Maintains contracted relationship with forensic investigation, crisis communications, credit monitoring and legal service providers in the event of a breach Conducts annual tabletop drill to test our Information Security Incident Response Plan and Procedures Maintains cybersecurity liability insurance

National Fuel periodically reevaluates its Information Security Program to assess whether planned initiatives are appropriate and to ensure that risk mitigation and defense efforts remain robust.

Governance of Corporate Responsibility, Sustainability and Climate Risk

The Board's structure and responsibilities are outlined in the Company's [Corporate Governance Guidelines](#). Individual committees offer expertise and oversight on specific ESG factors.

Committee	ESG Factor Overview
Audit	<ul style="list-style-type: none"> Financial statement integrity Internal control systems Audit processes Enterprise Risk Management process (ERM)¹
Compensation	<ul style="list-style-type: none"> Compensation philosophy and practices Executive compensation tied to ESG metrics
Nominating/Corporate Governance	<ul style="list-style-type: none"> Corporate governance and performance Oversight of corporate responsibility and sustainability Board composition and diversity

All members of the Audit, Compensation and Nominating/Corporate Governance committees are independent.

¹ The ERM process is reviewed quarterly during the Audit Committee meetings, which all directors are invited to attend. However, the entire Board of Directors maintains oversight and responsibility of enterprise risks.

Nominating/Corporate Governance Committee

The Nominating/Corporate Governance Committee is tasked with oversight of corporate responsibility, and ESG matters are a standing agenda item at Nominating/Corporate Governance Committee meetings, which are typically attended by the full Board.

Oversight for corporate responsibility and sustainability flows from the Nominating/Corporate Governance Committee of the Board to our CEO and President, and throughout the Company via our Corporate Responsibility Executive Committee, of which the CEO is Chair. The Executive Committee is made up of the Company's senior executive team.



“We align our ESG priorities with identified enterprise risks and opportunities, and believe that effective management of those priorities is integral to building a sustainable, inclusive and successful future.”

Meghan Corcoran
Corporate Responsibility Officer

Our Governance of Sustainability

Nominating/Corporate Governance Committee

Oversees and provides guidance on corporate responsibility and sustainability initiatives, strategies and decision-making.

Corporate Responsibility Executive Committee

Accountable to the Board for implementation and development of corporate responsibility and sustainability strategies. Participates in the enterprise risk management process.

Corporate Responsibility Officer

Executive responsible for corporate responsibility disclosure and advancing the Company's sustainability agenda.

Corporate Responsibility Management Committee

Responsibility for prioritizing progression of corporate responsibility and sustainability agenda in specific SME areas, as well as updating Company disclosures.

Governance and Risk Management SMEs

Human Capital Development SMEs

Environmental, Health and Safety SMEs

Energy Transition SMEs

Audit Committee

The Audit Committee discusses guidelines and policies that govern management's process for assessing and managing the Company's exposure to risk. On a quarterly basis, the Audit Committee reviews the Company's ERM report. These meetings are typically attended by the entire Board. The Audit Committee also oversees the scope of work of the Company's Audit Services Department, which includes review of the internal audit function's annual risk-based audit plan. The Audit Services Department considers significant risk categories identified through the ERM process when creating its internal audit plan. Additionally, in conjunction with its review of the integrity of the Company's financial statements, the Audit Committee discusses with management major financial risk exposures and the steps taken to monitor and control those exposures. The Audit Committee also provides assistance to the Board in fulfilling its oversight responsibility relating to the integrity of the Company's financial statements.

Compensation Committee

The Compensation Committee is responsible for designing and approving compensation systems for the Company's executives, including performance-based compensation that reflects the Company's priorities in matters such as financial and ESG performance. The Compensation Committee also reviews and issues recommendations on director compensation for approval by the Board of Directors.

Risk Oversight and Risk Management

Risk Oversight

The Board retains oversight of strategic, financial, operational and regulatory risks. An important aspect of the Board's oversight role is the ERM process, under which enterprise-wide risks have been identified, including climate-related risks, along with mitigative measures to address and manage such risks. Through its ERM process, the Company identifies specific foundational risks, critical risks and potentially emerging risks and assesses these risks, along with any newly identified risks, on a quarterly basis with the Board. Management also reports quarterly to the Board on significant matters within these risk categories. In addition, management provides a detailed presentation on a topic related to one or more risk categories at each quarterly Board meeting. Additional review or reporting on enterprise risks is conducted as needed or as requested by the Board. The Board and management consider enterprise risks and opportunities in their strategic and capital spending decision-making process, and the Board directs management to integrate corporate responsibility concerns into decision-making throughout the organization.

Risk Management

National Fuel Gas Company has a long-standing risk management process to manage potential risks to our business, including potential risks related to climate change. The Company's General Counsel leads an internal ERM Team that manages the ERM process and reports to the Board. The ERM Team works with senior management to facilitate the identification and monitoring of foundational risks and the assessment, management and monitoring of critical risks and potentially emerging risks within the major risk categories. Within these major risk categories, the Company also identifies physical and transitional risks and their potential financial impact under the TCFD subcategories.



Major Risk Categories

To identify foundational, critical and potentially emerging risks, each member of the senior management team meets with business unit leaders, business segment officers and department heads in their individual subsidiaries or functional areas of responsibility to identify and provide an initial assessment for segment specific and functional area specific risks. The senior management team then discusses the identified risks and develops a list of the most material risks, both on a consolidated basis and by segment. Foundational risks are the key risks that the Company constantly monitors and mitigates. Each identified critical risk feeds into one of these foundational risks. Critical and potentially emerging risks are rated within an ERM matrix according to the following criteria:

- **Likelihood:** Measures how likely a risk will occur within the risk assessment period with current controls and mitigation measures in place.
- **Severity:** Measures how significant the risk impact is to the Company (primarily considers financial impact, impact to stock price, and reputational risk).

Based on this analysis, the senior management team assesses the significance of the identified risks to the Company. Risks are categorized as either critical or potentially emerging based on their position within the ERM matrix (based on likelihood of occurrence and severity of impact). Each identified risk is assessed on 1-year, 5-year and 20-year bases.

- **Critical Risks:** Any identified risks assessed with a high severity in the 1-year or 5-year assessment regardless of likelihood, or any risks that have a sustained high likelihood of occurrence in the 1-year and 5-year assessments regardless of severity.
- **Potentially Emerging Risks:** Any risks with a low severity and likelihood in the 1-year and 5-year assessments, or any risks that have a sustained low severity in the 1-year and 5-year assessments, but a high likelihood of occurrence in the 5-year assessment.

For those identified as critical risks, the ERM Team provides to the Board a more detailed narrative of the risk, outstanding items of interest taken into consideration when assessing that risk, and the current mitigation measures for that risk.

On a periodic basis, the senior management team reviews the foundational, critical and potentially emerging risks and decides, based on individual discussions with the segment or functional area business leaders, whether any revisions or additions are warranted and whether there are any changes to the individual risk assessments. A member of the ERM team presents this reviewed document to the Board of Directors during Audit Committee meetings, and Directors provide input on risk identification and assessment.

Risk Management – Business Continuity Planning

National Fuel maintains a robust business continuity program to ensure the Company can respond effectively to a crisis. A comprehensive Incident Management Plan (“Plan”) and a diverse, interdepartmental Incident Management Team (“Team”) supports the program.

The Team proactively tests the Plan annually to verify the Company’s readiness to respond to natural disasters or large-scale pipeline or information technology system events. In 2022, the Team conducted an in-depth simulation of, and response to, a realistic cybersecurity incident with pipeline system implications. When simulating its response to this scenario, the Team addressed critical topics, including but not limited to, operational priorities, recovery operations, coordinating with regulatory agencies, pipeline system safety and reliability, mutual aid and internal and external communications.

The Team identified opportunities for improvement during the simulation to further strengthen National Fuel’s ability to respond to a major incident in accordance with our guiding principles.

Management of the Legal and Regulatory Environment

As part of the risk identification process, the Company has identified regulatory risks that could impact the Company financially. The Company’s businesses are subject to regulations under a wide variety of federal, state and local laws, including regulations and policies related to environmental impacts and climate change. Existing statutes and regulations may be revised or reinterpreted and new laws and regulations may be adopted or become applicable to the Company, which may increase the Company’s costs or affect its business in ways that are difficult to predict. The natural gas industry’s operations are subject to an increasingly rigorous regulatory regime with respect to environmental and ecological impacts. The Company regularly reviews and evaluates the impact that proposed environmental regulations may have on our business segments. Climate-related risks and the potential impacts associated with those risks are summarized below, as well as in the Company’s periodic filings with the federal Securities and Exchange Commission.

As indicated in the [Management of Climate-Related Risks and Climate Strategy](#) section, the regulatory and legislative developments related to climate change may affect the Company’s operations and financial results. Additionally, the trend toward increased conservation, competition from renewable energy sources, and technological advances to address climate change may reduce the demand for natural gas. The next page lists different requirements within our operating territories that could affect the Company’s operations, and therefore are considered during the ERM process.

- **New York:** Implementation of the Climate Act, which created emissions reduction and electric generation mandates, and related regulatory actions, could impact the Downstream Segment's customer base and inhibit the Midstream Segment's ability to develop new projects or facilities. As part of this implementation, New York State enacted legislation that includes a natural gas ban for certain new construction beginning in 2026.
- **Pennsylvania:** Methane reduction framework for the oil and gas industry that has resulted in permitting changes with the stated goal of reducing methane emissions from well sites, compressor stations and pipelines.
- **Federal:** The Inflation Reduction Act, passed into law in 2022, included a methane charge that is expected to be applicable to the reported annual methane emissions of certain oil and gas facilities above specified methane intensity thresholds, starting in calendar year 2024.

Legislation or regulation that aims to reduce emissions could also include GHG emissions limits and reporting requirements, carbon taxes, severance taxes, restrictive permitting, increased energy efficiency standards, and incentives or mandates to conserve energy or use renewable energy sources.

Our senior management team is responsible for reviewing the application of the Company's ERM process and for reviewing the effectiveness of corporate strategy in prioritizing, addressing, and mitigating critical risks, including climate risks. Business unit leaders are responsible for ensuring compliance with current risk management plans, and considering and developing, where warranted, additional mitigative measures for critical risks depending on senior management's decision with respect to the risk ranking. Critical and potentially emerging risks are listed within the ERM matrix based on their impact to the Company. Critical risks are then prioritized based on their impact to the Company and the Company's ability to mitigate, transfer or control identified risks.

Management of Climate-Related Risk and Climate Strategy

The Company has elected to implement the recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD), aligning our climate-related risk reporting with the four central themes of the TCFD – Governance, Strategy, Risk Management, and Metrics and Targets. In furtherance of these efforts, in 2022, the Company published its inaugural Climate Report. Overall, the Company continues to take important steps to position its business to play a meaningful role in a lower carbon economy. The Company's [Climate Report](#) describes many of those efforts, highlighting the resilience of its operations to potential risks associated with climate change and identifying opportunities to further participate in the ongoing energy transition.

Building on our sustainability governance and risk oversight disclosures, National Fuel has enhanced its climate-risk disclosure in its Climate Report through 1) identifying climate-related risks and opportunities, 2) describing how these climate-related risks and opportunities may impact the Company's strategy and financial planning, 3) describing how these climate-related risks are identified, assessed and managed through our ERM process, and 4) disclosing metrics and targets related to each of our businesses.

Elements of TCFD



Climate Risk Assessment

The Company recognizes the ongoing developments and risks surrounding climate change, as well as the corresponding opportunities with the transition to a low-carbon economy. As described in [Risk Management](#), the Board and management consider these risks and opportunities and their corresponding impacts on the organization's businesses and strategy through the enterprise risk management program, strategic planning process and capital spending decision process.

When evaluating the impact of climate-related risks, the Company considers short-, medium- and long-term time horizons and whether the identified risks could have a potential financial impact on the Company within those time horizons.



Climate-Related Risks and Potential Impacts

The Company considers climate-related risks as part of its ERM process, which ultimately informs corporate strategy and the capital spending decision process. The TCFD identifies two categories of climate-related risks – physical risks and transitional risks.

TCFD Physical Risks

Physical risks include acute event-driven physical risks (e.g. severe weather event) and chronic longer-term physical risks (e.g. shifts in climate patterns and sustained higher temperatures). Given the Company's weather-hardened infrastructure and geographic location, our comprehensive review of future climate-related physical risks indicated that there is a low financial risk exposure to the Company.

Climate-Related Physical Risks	Risk	Potential Impact
Acute	More frequent and severe weather events	<ul style="list-style-type: none"> • Business interruption or system shutdown leads to reduced margins • Increased costs for operational damage • Increased insurance premiums
Chronic	Long-term shift in climate patterns resulting in new storm patterns or chronic increased temperatures	<ul style="list-style-type: none"> • Decreased revenues as a result of warmer weather/less degree days • Supply chain disruption

Of the physical and transitional climate-related risks, the medium-term and long-term risks that have the potential to be the most impactful for the Company are:

Medium-Term Risks

- **Policy and Regulatory Changes:** Regulatory changes at the federal, state, and/or local levels could create lack of support for system modernization or require facility modifications, including potential new requirements aimed at reducing emissions for new and existing facilities, increasing capital needs or operating costs, or restricting existing operations.
- **Project Opposition:** Opposition during the project/facilities planning phase, or during or after construction, could limit growth opportunities if projects become difficult to construct due to prolonged timelines and increased construction costs.
- **Decreased Demand for Natural Gas:** Demand for natural gas could decrease through renewable energy adoption and subsidization, which could lead to decreased margins, or the inability to recover the Company's financial investment in assets.

Long-Term Risks

- **Policy and Regulatory Changes:** Evolving federal, state and local statutory and/or regulatory approaches could negatively impact the Company's ability to grow or maintain its operations and assets. Potential developments could include regional or statewide bans on natural gas, including the installation of new natural gas equipment and facilities; increased restrictions on certain operating practices; and cap-and-trade, severance tax and/or carbon tax implementation.
- **Financial Counterparty Restrictions for Carbon-Intensive Industries:** Access to, and cost of, capital could be negatively impacted due to limitations and restrictions on sources of funding, or insurer divestment from carbon-intensive industries could lead to increased insurance premiums.
- **Project Opposition (see Medium -Term Risks)**
- **Decreased Demand (see Medium -Term Risks)**

Transitional Risks and Potential Impacts

Climate-Related Transitional Risks	Risk	Potential Impacts
Policy and Legal (Regulation, legislation and litigation)	Regulatory and Legislative Initiatives <ul style="list-style-type: none"> • Carbon taxes and cap-and-trade programs • Lack of support for system modernization • More stringent emissions regulations or regulatory changes require major system remediation or changes in operating practices • Revisions to federal statutes, laws or policies related to the drilling or completion of natural gas wells Political Risks Associated with Climate Pledges <ul style="list-style-type: none"> • Regional or statewide natural gas bans • Limited geographic footprint • Ban on hydraulic fracturing or increased permitting/operating requirements • Increased permitting requirements surrounding water usage and management for production operations Increased Government Subsidies for Alternative Energy Sources	<ul style="list-style-type: none"> • Increased costs and reduced revenue from reduction in consumer demand based on incremental costs for usage • Negative rate case results • Increased costs for system changes without rate recovery • Lower throughput/demand for natural gas • Production curtailment and related revenue impacts • Decreased revenues • Inability to recover financial investment in assets
Technology (Improvements or innovations that support decarbonization)	<ul style="list-style-type: none"> • Decreased natural gas demand due to renewable energy adoption/technology developments 	<ul style="list-style-type: none"> • Limited pool of potential investors to finance growth • Access to, and cost of, capital negatively impacted
Markets (Shifts in supply and demand for fossil fuels)	<ul style="list-style-type: none"> • Shifts in supply and demand for natural gas 	<ul style="list-style-type: none"> • Increased insurance premiums • Increased shareholder activism leads to higher costs
Reputation (Changes in customer and community perceptions and behaviors)	<ul style="list-style-type: none"> • Investors shift away from carbon-intensive industries • Financial counterparty restrictions for carbon-intensive companies • Increased opposition to new projects/facilities • Employee attraction and retention • Litigation and lobbying aimed against carbon-intensive companies 	<ul style="list-style-type: none"> • Prolonged project timelines and increased construction costs • Limited growth opportunities • Impact on share price

Identification and Evaluation of Climate-Related Opportunities

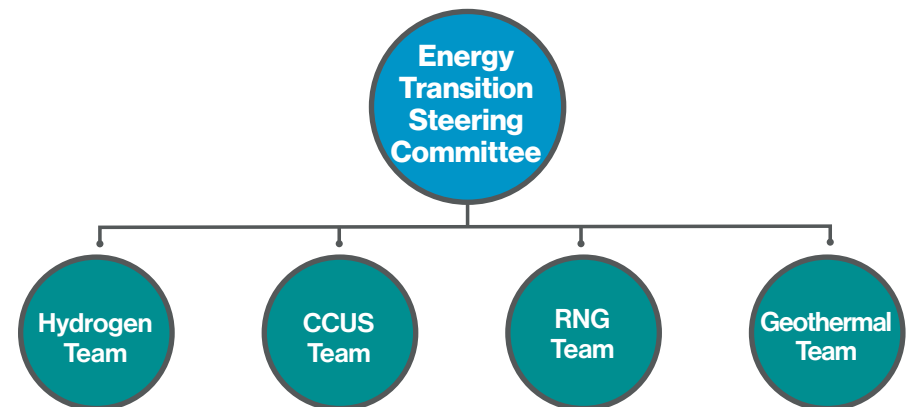
Natural gas has played a pivotal role to date in decarbonizing our economy, driving significant reductions in regional and national GHG emissions over the past decade. The Company believes that natural gas will remain an important part of the future energy solution as the economy moves toward decarbonization. The Company expects that there will be a long-term need for natural gas, particularly Appalachian natural gas production, which has a much lower carbon intensity than other basins within North America. The Company expects that natural gas will continue to meet the energy needs for critical industrial processes, as well as for consumers in cold weather regions such as the Northeastern United States, due to its reliability and affordability, remaining a fuel of choice for end-users. We also expect that natural gas will play a long-term, critical role complementing the expansion of renewable energy – providing a readily dispatchable and reliable energy source during periods where renewable energy is unable to meet increased energy demand or is otherwise unavailable.

Climate-related opportunities arise through the Company's pursuit of mitigating climate-related risks, as well as the Company's consideration of business development opportunities presented as part of the transition to a low-carbon economy.

The Company's Energy Transition Steering Committee guides Company investment opportunities as the economy moves toward decarbonization. The Committee's goal is to reduce the Company's emission profile and find new business development opportunities. The Steering Committee is made up of the following:

- President and Chief Executive Officer
- Chief Operating Officer
- Presidents of the Company's primary subsidiaries
- General Counsel
- Principal Financial Officer
- Vice President of Commercial Services – Pipeline & Storage business

The Company has also developed specific teams made up of technical, regulatory and business development subject matter experts focused on hydrogen; Carbon Capture, Utilization and Storage (CCUS); RNG; and geothermal. Each team reports up to the Energy Transition Steering Committee, which is tasked with reviewing the team's progress, establishing next steps, and providing direction on time and resource allocation that will best position the Company for the future.



Currently, the Company is pursuing ways to improve resource efficiency and lower emissions, as well as exploring alternative low- and zero-carbon fuel sources. The potential impact of these climate-related opportunities could include operational efficiencies resulting in increased revenue and lower costs, greater access to capital at a potentially lower cost due to the Company's reduced carbon footprint, and increased revenues, earnings and cash flows driven by execution of business development opportunities.

Identified Opportunities under the TCFD Framework

TCFD Category	Climate-Related Opportunities
Resource Efficiency	<ul style="list-style-type: none"> • Modernize existing equipment to minimize emissions • Install low-emissions technology on new facilities • Maximize recycling of produced water • Promote customer efficiency • Use more efficient distribution and production processes
Energy Source	<ul style="list-style-type: none"> • Leverage alternative energy sources and efficiency initiatives to reduce the Company's energy usage
Products and Services	<ul style="list-style-type: none"> • Leverage our existing infrastructure expertise to develop RNG production facilities • Explore leveraging existing infrastructure to transport alternative low-carbon fuel sources, such as RNG and hydrogen • Explore CCUS opportunities
Markets	<ul style="list-style-type: none"> • Access to markets seeking responsibly sourced natural gas production
Resilience	<ul style="list-style-type: none"> • Improved efficiencies for natural gas development and gathering operations within contiguous acreage position

Focus on RNG

“The mission of the RNG Team is to leverage National Fuel's existing expertise and infrastructure to facilitate the procurement and delivery of low-carbon RNG; identify, fund and develop RNG projects; and educate key stakeholders to advance the Company's decarbonization initiatives.”

Catie Hilliard

Director, Energy Transition Development



Focus on Hydrogen

Planned Potential Hydrogen-Related Initiatives

- A blending test at a Company training facility;
- The development of a hydrogen production and usage feasibility study;
- Blending up to 30% hydrogen into a compressor engine at a Company-owned compressor station; and
- Planned participation in regional clean hydrogen hubs.

Hydrogen R&D Objectives

- Understand GHG emissions reduction potential;
- Test hydrogen readiness of system and appliances;
- Develop employee training; and
- Review codes, standards and permitting requirements.



Wheatfield Gardens – Hydrogen Blending Demonstration Project at Greenhouse Facility

“Natural gas is, and will remain, a critical component of decarbonization efforts. As part of these efforts, National Fuel is evaluating alternate energy sources with lower carbon emissions, including hydrogen and hydrogen enriched natural gas, while also ensuring the continued safety, reliability and integrity of our system.”

Matt Wisotzky
Senior Engineer



Ensuring the Resilience of our Business to Climate Risk

Transitional Risk Analysis

Company Climate Report

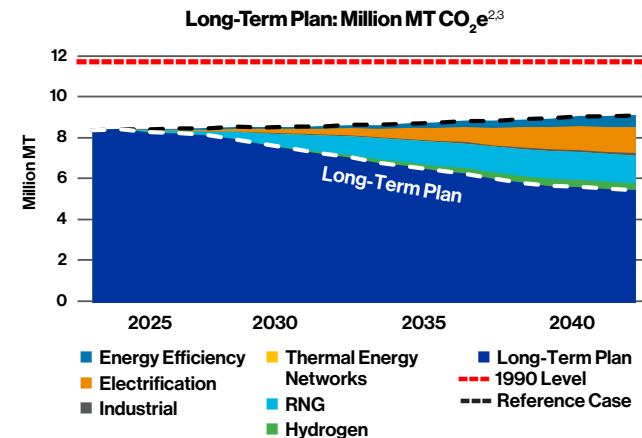
In connection with the publication of the Company's 2022 [Climate Report](#), National Fuel retained ERM, an independent third party consultant, to conduct a climate scenario analysis across all segments of its business, including a lower than 2°C scenario ("Sustainable Development Scenario"). For the purposes of this analysis, National Fuel utilized future energy market scenarios developed by the International Energy Agency (IEA) to test the resiliency of the Company's assets and operations against potential future climate-related transitional risks. Each scenario assumed a different set of policy changes, as well as market trends (demand), energy efficiencies and technology advancements.

Under the carbon-constrained Sustainable Development Scenario, our analysis showed that National Fuel can continue to operate profitably and generate free cash flow through 2050 even using the IEA's pessimistic long-term natural gas price of \$2.00 per dekatherm and dramatically reduced demand. Furthermore, due to the national focus of the Sustainable Development Scenario, our analysis did not take into account significant potential regional benefits or other key positive differentiators for National Fuel's operations, including the proximity of our pipelines to large winter-focused energy demand markets, our significant depth of prospective natural gas drilling locations within Appalachia, and our large fee-acreage position in the Marcellus and Utica shales, which provides a cost advantage versus peers. These key differentiators, along with our analysis under the respective scenarios, provide the Company with further confidence in our portfolio's resilience.

Downstream Segment's Long-Term Plan and Scenario Analysis

Distribution Corporation recently submitted its final Long-Term Plan (LTP) for its New York service territory in accordance with the NYPSC's Gas System Planning Proceeding.¹ The LTP demonstrates the Company's commitment to pursuing responsible GHG emissions reductions, enhancing the resilience of the energy system, and delivering safe, reliable and affordable energy service to customers.

Taken together, the decarbonization actions in Distribution Corporation's LTP will make substantial contributions towards New York's decarbonization goals. The LTP is projected to reduce emissions by 40% by the end of a 20-year horizon (2042) compared to the Reference Case (business-as-usual) levels, and by 53% from 1990 levels. The emissions reductions start modestly and increase over time as constraints on deploying technology are resolved. Emissions reductions are expected to continue after 2042, through 2050 and beyond as further discussed in the Downstream segment's [External Factors Impacting Affordability](#) section.



- ¹ In Case 20-G-0131, the NYPSC created a long-term gas system planning process for local gas distribution companies. Pursuant to that process, Distribution Corporation filed its long-term plan with the NYPSC. Stakeholders had opportunities to participate in review of this plan through meetings, information requests and written comments.
- ² Industrial (0.11) and Thermal (0.01) are not visible on the graph but remain listed as key elements to our overall LTP.
- ³ Includes scopes 1, 2 and 3 emissions.

Physical Risk Analysis

Similar to transitional climate risks, the Company completed a review of future physical risks from climate driven hazards across Upstream, Midstream and Downstream assets in its portfolio, as detailed in the Company's 2022 [Climate Report](#). The Company conducted a physical risk assessment with two climate scenarios, in alignment with TCFD recommendations:

- **Business-as-usual scenario:** Society follows a regional rivalry trend with competition among regions, low technological advancement, and high challenges to both adaptations and mitigations. Global temperature increases are held below 4°C by 2100.
- **Optimistic and attainable scenario:** The world follows a sustainable path with low challenges to mitigations or adaptations. Global temperature increases are held below 2°C by 2100.

The Company stress tested a representative sample of its critical assets to evaluate its exposure to climate physical risk by analyzing the 4-degree Celsius scenario.

Climate Hazards

Acute	Chronic
<ul style="list-style-type: none"> • Flooding • Landslides • Hurricanes • Wildfires 	<ul style="list-style-type: none"> • Extreme Heat • Extreme Cold • Water Stress & Drought

To further understand the mid- and long-term physical risks, the Company reviewed the 30-year average risks under both scenarios at two time horizons: 2030 and 2050. Both acute hazards (hurricanes, riverine flooding, coastal flooding, wildfires, landslides, extreme rainfall) and chronic hazards (water stress, extreme heat and extreme cold) were evaluated under each scenario and at each time horizon. In accordance with TCFD recommendations, the analysis calculated the indicative financial risks due to direct damage or business interruptions from these future climate driven hazards.

This comprehensive review of future physical risks from climate-driven hazards across critical assets within our Upstream, Midstream and Downstream segments indicated that there is relatively low financial risk from climate hazards in 2030 and 2050 to our facilities and operations. This is largely due to the location of our assets, coupled with the fact that the vast majority of our infrastructure is designed to withstand severe weather. Further details on the Company's segment-specific transitional climate-risk analysis are available in the Company's 2022 [Climate Report](#).

Climate-Related Metrics and Targets

In connection with the Company's ongoing sustainability efforts, which include its enhanced TCFD disclosures, the Company evaluated key metrics and developed targets to measure and monitor its performance and progress in the future in managing GHG and methane emissions. National Fuel has established targets on a consolidated basis and at the segment level: a corporate-level Scope 1 & 2 GHG emissions reduction target (2020 baseline), and segment-level Scope 1 & 2 methane emissions intensity targets (2020 baselines). Additionally, the Utility Segment set Scope 1 reduction targets for delivery system emissions (1990 baseline). Through the risk management process, the Company identified these metrics as the most useful in managing climate-related risks and established corresponding targets to further our emissions reduction strategy:

- Methane Intensity Reduction Targets at each of our businesses
- GHG Emissions Reduction Target for the consolidated Company
 - 25% reduction in total GHG emission by 2030
- Utility Delivery System GHG Emissions Targets
 - 75% reduction by 2030
 - 90% reduction by 2050

The Company has made significant progress against its various methane intensity targets since 2020 driven by emissions mitigation projects, successful implementation of best management practices, and continued system modernization. More information pertaining to the Company's programs that are driving our progress to limit GHG emissions can be found in the [Downstream Segment's Greenhouse Gas Emissions](#) disclosure, the [Midstream Segment's Greenhouse Gas Emissions](#) disclosure, and the [Upstream Segment's Greenhouse Gas Emissions](#) disclosure.

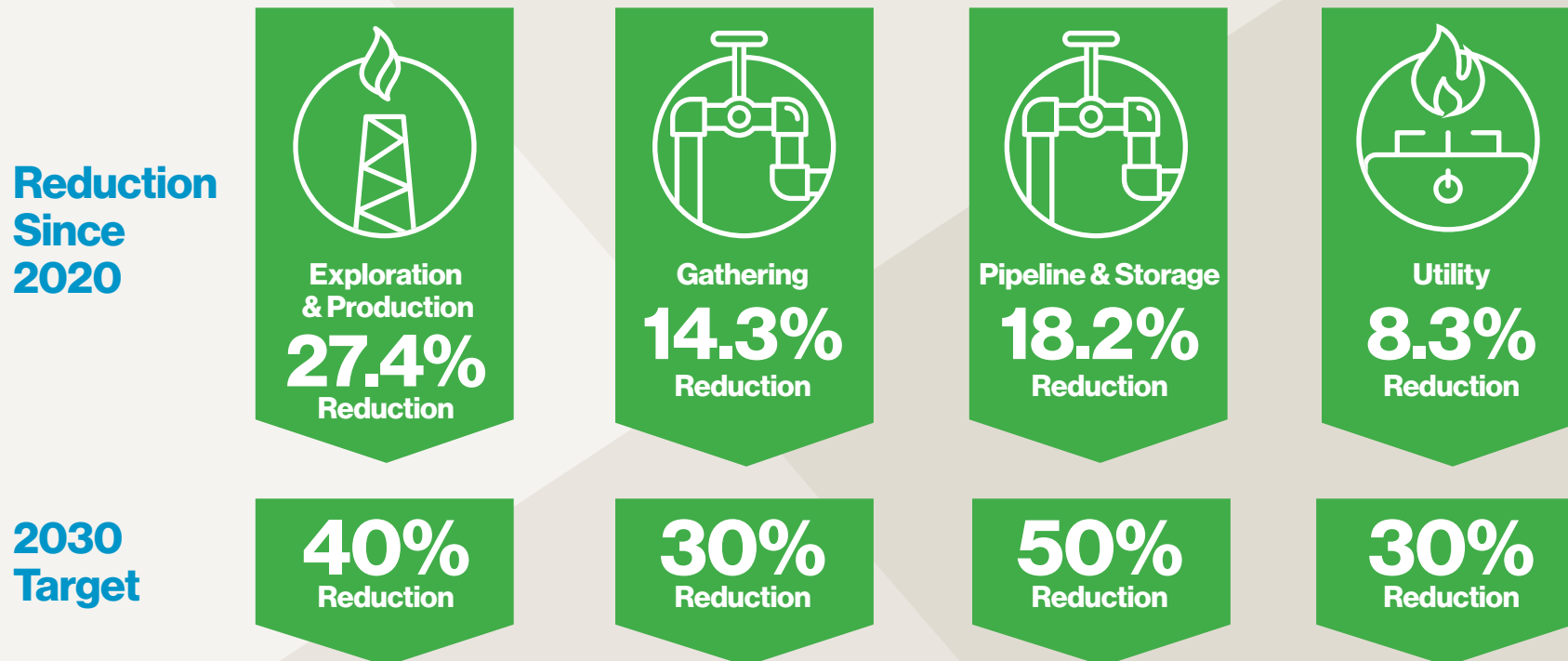
At the corporate level, the Company's goal is to reduce GHG emissions 25% by 2030. Despite the significant growth of our federally-regulated pipeline business – placing into service a 330,000 dekatherm/day expansion project in December 2021 – and a significant increase in our natural gas production, the Company-wide GHG emissions reflect only a slight increase versus 2020 (increased by 1.3%) due to facility additions. In future years, we plan to build on our efforts through continued system modernization and implementation of available technologies, as well as evaluation of pilot projects as new technologies are made commercially available to help meet our consolidated GHG emissions target. Additionally, the Company has reduced its total consolidated methane emissions 6.8% since 2020. Our continued focus on constructing efficient and low-carbon intensity facilities and systems, while also improving emissions reductions of our existing operations, has allowed the Company to reduce methane emissions and limit total GHG emissions while meaningfully growing our business.

Progress Toward Methane Intensity Targets



2030 targets based on implementation of expected emissions reduction initiatives

Methane Intensity



Our Employees and Communities



SAFE. RELIABLE. AFFORDABLE. SUSTAINABLE.

A portrait of Amy Shiley, Vice President of Human Resources, smiling. She has dark hair and is wearing a blue, long-sleeved, lace-like top. Her glasses are perched on her head. The background is a colorful mural with various icons including an American flag, a person with arms raised, and a family silhouette.

“ Our employees are our most valuable asset. By investing in our people and developing initiatives that are responsive to employee engagement, we’ve continued to focus on creating a safe, inclusive and flexible work environment where our employees can thrive. ”

Amy Shiley
Vice President of Human Resources

Human Capital Management

The ongoing success of National Fuel and its subsidiaries is the direct result of our employees' hard work and dedication. National Fuel employs more than 2,200 full-time employees across its New York, Pennsylvania and Texas locations. The Company prides itself on being a local employer that does not compromise its integrity and commitment to the Company's guiding principles.

Culture Focused on Safety and Building Community

Safety Culture

National Fuel continuously works to establish a culture that focuses on all aspects of safety. The Company has implemented numerous safety programs and management practices to foster a safety culture embraced throughout the entire organization. See [Integrity of Gas Delivery Infrastructure](#), [Operational Safety](#), [Emergency Preparedness and Response](#) and [Workforce Health and Safety](#) for more information related to the Company's safety programs and management practices.

The Company prioritizes the safety of, and support for, our workforce. As a provider of an essential service, National Fuel remains committed to the safe and reliable delivery of natural gas to our communities while maintaining the safety of our employees and customers.

Building Community

- **Focus on Inclusion:** We understand that developing a more inclusive organization means creating access to opportunities and investing in employees' experiences. Our Employee Resource Groups (ERGs) have provided a supportive place for employees to engage and connect with fellow employees from historically underrepresented backgrounds and those who are allies to the group.



EDGE Fuel



FEMALE Fuel



Pride Fuel & Allies



Vet Fuel

- **Focus on Engagement:** National Fuel continues to look for ways to strengthen connections among our employees through employee engagement and community-focused activities. We recently launched Days of Doing, a Company-wide service initiative as part of our Faces of Fuel volunteer program, where employees can choose to participate in community service activities with coworkers during work hours. The Company is committed to finding ways to improve employee experiences while driving positive change in the communities where we live and work.
- **Focus on Flexibility:** National Fuel continues to offer flexible work arrangements, hybrid work schedules and remote work for departments that can accommodate those schedules. There is an elevated level of participation in the hybrid work model, and we continue to look for ways to create a flexible, inclusive work environment that is responsive to our employee engagement.

Human Capital Management – Employee Attraction and Retention

The ongoing success of National Fuel is the direct result of our employees' hard work and dedication. The Company aims to attract the best employees and to retain those employees by striving to offer competitive benefits and compensation packages, as well as career development and training opportunities. The Company also prioritizes employee safety and wellness, and strives to create a safe, inclusive and productive work environment for everyone. In addition to our benefits and development programs, some of our employee attraction initiatives include:

- **Employee Referral Program:** The Company offers bonus incentives to referring employees if their referral gets hired. This program assists in identifying talented individuals as part of the recruitment process and reflects referring employees' endorsement of the Company's culture and workforce development.
- **Diversity Focused Recruitment Initiatives:** Our Diversity, Equity and Inclusion team regularly partners with the recruitment team to identify diverse hiring opportunities and participates in onsite recruitment events.



Invested in our Employees

National Fuel is only as strong as the human capital that we retain and develop at all of our subsidiaries. To attract employees and meet the needs of our workforce, National Fuel offers a robust benefits package at all our subsidiaries, as well as tools and development resources to enhance their skills and careers. Our benefits package options may vary depending on type of employee (e.g., full-time versus part-time) and date of hire. Additionally, the Company continually looks for ways to improve employee work-life balance and well-being.

Beginning with fiscal year 2023, the Company introduced an annual cash variable pay bonus program for salaried employees at the regulated companies. This program is intended to better align employee compensation with the market while providing greater incentive to the Company's employees to work toward the achievement of Company goals. These goals include our ESG objectives and the coordinated business goals of the Company's subsidiaries as a whole. This meaningful investment illustrates the Company's view that attracting, retaining and motivating our employees is integral to the Company's success.



Our Employee Benefits and Development Opportunities

Benefits	Lifestyle	Development
<p>Healthcare</p> <ul style="list-style-type: none"> • Medical and prescription drug • Dental • Vision • Fertility/Family Planning <p>Insurance</p> <ul style="list-style-type: none"> • Life insurance • Accidental death and disability • Short-term disability • Long-term disability • Optional life insurance • Business travel accident <p>Financial</p> <ul style="list-style-type: none"> • 401(k) with matching company contribution - Including a Roth 401(k) Investment option • Company-funded retirement savings account • Flexible spending account for medical care reimbursement • Flexible spending accounts for daycare and adoption expense • Annual cash variable pay bonus program for salaried employees 	<ul style="list-style-type: none"> • Paid time off ("PTO") • Alternative work schedules • Flex hours • Matching charitable giving program • Family and medical leave (includes parental leave) • Faces of Fuel volunteer program • Lactation friendly workplace • Fertility care benefits • Professional part-time employment track • Hybrid in-office/remote work options, where feasible • Employee Resource Groups • Days of Doing corporate community service events 	<ul style="list-style-type: none"> • Tuition aid program for educational pursuits related to present work or possible future positions, including the sponsorship of Professional Engineer Licensing • Continuous talent review and succession planning • Professional development and possible cross-training area discussions encouraged during annual performance reviews • Corporate and technical training programs based on position and employee need • Opportunities for on-the-job growth through stretch assignments or temporary projects • Supervisory employees meet at least annually, one-on-one with a member of the leadership team, to discuss potential career paths and employee development

Diversity and Inclusion

National Fuel is committed to hiring and developing qualified individuals who can enhance and contribute to the diversity of our workforce. The Company recognizes that a diverse talent pool provides the opportunity to gain new perspectives, ideas and solutions to help the Company succeed. To further our commitment to diversity and our guiding principle of transparency, National Fuel tracks diversity indicators and shares that demographic data within this report. Like many employers, we continue to face the current labor market challenges relating to hiring and retention. While this demographic data provides a key snapshot that helps us identify opportunities to do better, it does not tell our whole story, or recognize the progress we've made in embracing diversity and inclusion within our organization. Our efforts to improve workplace diversity prioritize a process of inclusion over endpoint statistics.

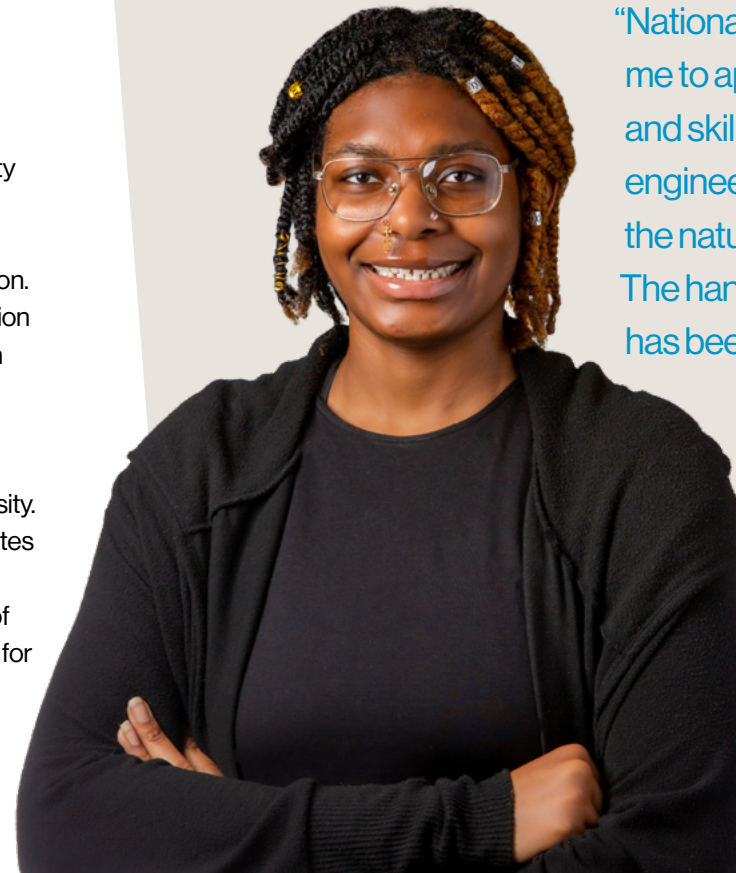
To build on our diversity commitment, the Board of Directors Compensation Committee continues to adopt specific diversity performance goals as part of the Company's at-risk executive incentive compensation. Establishing a diversity and inclusion goal for officers emphasizes the importance of these initiatives as a corporate value, and supports executive involvement in diversity and inclusion initiatives within their areas of responsibility, as well as throughout the organization. The Company also encourages each department to apply a diversity and inclusion lens as they perform their job functions to build awareness and embed inclusion in our everyday actions.

Additionally, in 2022, the Company developed a variable pay program for salaried employees that mirrors the at-risk executive compensation goal focused on diversity. The goal is aimed at achieving higher rates of diversity with interviewed candidates for salaried/professional level positions, as well as promoting the Company's participation in community-based outreach events to attract a greater number of diverse candidates. Incorporating this goal into the annual cash bonus program for salaried employees reinforces our shared commitment to enhance diversity.

National Fuel Scholar: Taniya Crosby

Taniya first became interested in engineering as a career path through the Buffalo Public School Career and Technical Education program. She was passionate about continuing education beyond high school and was able to tap into resources offered through the University at Buffalo Upward Bound Program, a program that prepares disadvantaged high school students for college.

Taniya was awarded a National Fuel Gas Company Foundation Scholarship in 2021, allowing her to further her education at Worcester Polytechnic Institute in Massachusetts. She plans to graduate in 2025 with degree in mechanical engineering and a minor in computer science and physics.



“National Fuel has allowed me to apply my education and skill set to real-world engineering projects in the natural gas industry. The hands-on experience has been invaluable.”

Community Outreach Focused on Diversity

National Fuel aims to cast a wide net of potential candidates to ensure we are considering all qualified individuals. Due to the demographics of many of our rural service locations and employment opportunities associated with those locations, the Company faces unique hiring challenges in attracting qualified individuals for those work sites.

The Company continues to collaborate with community groups and organizations to help promote awareness of job opportunities within diverse communities and hopes to build on this trend with the initiatives outlined below.

- Participate in community outreach events to educate job seekers about our commitment to equitable employee representation.
- Encourage employees to consider diversity when making referrals through the Employee Referral Program.
- Partner with community organizations to sponsor scholarship programs, which provide significant financial support to underrepresented individuals pursuing college degrees in STEM or business-related fields.
 - Since 2019, the Company has awarded a \$15,000 scholarship per year for a total of four years to college bound seniors through the National Fuel Scholars Program. In 2022, 10 students received the scholarship, and 4 of these students also participated in the Company's summer internship program.
 - The Company maintains touchpoints with the scholarship recipients to provide support throughout their college experience, as well as opportunities to learn about National Fuel and potential job opportunities.

Additionally, the management and executive groups regularly participate in the interview process and are actively involved in the promotion process, which helps reinforce their commitment to equitable representation. Internally, the Company maintains a job posting program, in which many openings are posted publicly for the employee group to see. This provides an opportunity for individuals to self-identify for positions throughout the organization. Furthermore, Company officers are encouraged to recommend individuals for cross-training opportunities within the organization.

Inclusion Commitment Reinforced Through Policies

To address the social risks inherent in any workplace, the Company has developed a robust compliance program and set of policies. These policies are designed to create a safe, inclusive and productive work environment, and reinforce our commitment to workplace inclusion.

- **Employee Handbook Policies:** Includes equal employment opportunity commitments, nondiscrimination disclosures and anti-harassment disclosures that communicate the Company's expectations with respect to maintaining a professional workplace free of harassment.
- **Nondiscrimination Statement:** Provides notice of the Company's policy on nondiscrimination and accessibility requirements, as well as notice of free language assistance services available to stakeholders.

- **Nondiscrimination and Anti-Harassment Policy¹:** Prohibits discrimination or harassment against any employee or applicant based on sex, race/ethnicity or the other protected categories. This policy is sent to employees annually through the employee survey and attestation process.
- **Labor and Human Rights Policy:** Guided by the International Labor Organization's (ILO) core labor principles concerning nondiscrimination, freedom of association and collective bargaining, forced labor and underage workers in the workplace. The Company also includes information with respect to grievance reporting.
- **Supplier Code of Conduct Policy:** Reinforces expectation that suppliers uphold Labor and Human Rights Policy, follow environmental, health and safety standards, and comply with anti-corruption expectations when transacting business with the Company.
- **Prevention Training:** Educates on, and reinforces a commitment to, a harassment-free workplace, which is further supported through regular communication of policies prohibiting discriminatory practices.
- **Executive Support:** Annually, the CEO reinforces the Company's commitment to equal employment opportunity by signing a corporate Nondiscrimination and Anti-Harassment Policy, and an EEO Policy Statement. Both policies are then displayed at all Company locations, included in all employee handbooks, and discussed with all new hires during their onboarding process.

¹ The Company's Nondiscrimination and Anti-Harassment Policy lists the following protected categories: age, race, creed or religion, color, national origin, sexual orientation, gender identity or expression, military or veteran status, sex or gender (including pregnancy, childbirth or related conditions), disability, predisposing genetic characteristics, familial status, marital status, status as a victim of domestic violence, and employee or dependent's reproductive health decision making.

“As we continue building an inclusive culture, I'm proud to join the Company's effort with new ideas and an approach designed to make employees feel valued, seen and heard.”

Ronnanisha Lumpkin
D&I Specialist, Human Resources



Fostering Inclusion Through Employee Resource Groups

Our four employee resources groups (ERGs) are voluntary, employee led, and are comprised of individuals who self-identify based on specific backgrounds, interests and/or demographic factors. The groups provide employees an opportunity for professional development, networking, mentoring and community involvement. The ERGs also serve as a vehicle for employees to communicate their perspectives and requests directly to senior management, with an executive sponsor for each group and a bi-annual meeting with the senior executive team.



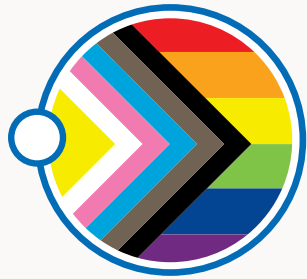
EDGEFuel
Ethnically Diverse Group of Employees

In addition to providing internal diversity and allyship programming for employees, EDGEFuel created numerous opportunities for its membership to get involved in the community. One example of EDGEFuel's community involvement was the coordination of a prom dress giveaway to benefit Buffalo Public and Charter School juniors and seniors. The group organized a dress collection drive among National Fuel employees and worked with a local minority-owned dry cleaning business to have the dresses cleaned.



VetFuel

In the fall of 2022, VetFuel hosted a raising of the flag ceremony for Veterans Day and invited employees across the Company to attend. Additionally, ERGs are able to nominate one or more nonprofits whose mission aligns with that of the group to receive grants from the National Fuel Gas Company Foundation. VetFuel awarded a total of three grants to the PTSD Foundation of America, WNY Veterans Housing Coalition and Pennsylvania Wounded Warriors, Inc.



PrideFuel & Allies

PrideFuel has worked to educate National Fuel employees on the importance of allyship. They presented on LGBTQIA+ History Month and have worked closely with Human Resources and Corporate Communications to share information across the Company. PrideFuel hosted PRIDE kickoff events, distributing flags to any employee who wanted one to help create a welcoming space at Company locations.



FEMALEFuel

In just a year's time, FemaleFuel has expanded its membership by 160%, with participation spanning 34 departments and 10 work locations. The group has established a Steering Committee comprised of 15 members to lead subgroups and to organize on-site events, meetings and collection drives.

2022 Diversity and Inclusion Initiatives



The Company understands that creating a diverse and inclusive workforce is critical to our success. As part of that journey, the Company continues to build on our current initiatives to create a more diverse, equitable and inclusive organization.

Ongoing D&I Initiatives	Progress
Focus on Diverse Recruitment	<ul style="list-style-type: none"> Executive team receives a monthly report about the composition of the Company's salaried (non-hourly) applicant pools. D&I Director and Specialist meet monthly with the Vice President of Human Resources to discuss diverse recruitment strategies and other D&I initiatives. D&I Director and Specialist also meet monthly with the General Manager of Human Resources to discuss opportunities and resources for the recruiting team. D&I Director provides opportunities for Human Resources to recruit and partner with organizations that serve diverse populations.
Initiatives of D&I Office	<ul style="list-style-type: none"> Implemented the Meter Reader Intern in Training (MRIIT) Program: Underrepresented high school students participate in the onsite paid internship the summer after completing their junior year. Students will be exposed to different job opportunities within the Operations department and learn about different career paths within the gas utility. Graduates of MRIIT will be equipped to start a career in the gas utility following graduation and can be eligible to receive an offer of full-time employment following their graduation from high school. Supports ERGs and their leaders. Develops Internal Talent Pipelines: Maintains close partnerships with the employment teams to develop talent pipelines, sponsorships and support activity for diverse employees. Partners with Corporate Communications: Collaboration to ensure that Company communications and branding initiatives offer diverse perspectives and are inclusive in targeting the communities we serve and our employee base. Enhancing Scholarship Programs: The D&I team works to enhance the depth of the scholarship programs granted to diverse students. Scholarship recipients are offered priority consideration for paid internships, mentorship and exposure to a variety of fields within the Company. Assists the Purchasing Department in pursuing their supplier diversity goals. Focused on LGBTQ+ engagement through offering diversity training surrounding LGBTQ+ rights, as well as improving accessibility for LGBTQ+ benefits through an Inclusive Benefits Guide for employees.
Diversity and Inclusion Training	<ul style="list-style-type: none"> Preferred Pronouns and Customer Respect Training: Employees are provided training and materials which emphasize treating customers with respect and using customers' preferred names and pronouns. Pilot Program for Salaried Employees: Middle managers have a direct impact on the culture of an organization and the employee experience. To create an inclusive culture, salaried employees participated in a two-part learning series that focuses on being intentional with inclusion, understanding and preventing microaggressions, and engaging in meaningful allyship. Manager Bias Training prior to annual performance reviews. Diversity Symposium: Employees are invited to participate in courses addressing: <ul style="list-style-type: none"> - D&I strategies for business success - Cultural Humility - Beyond Tokenism - Inclusive Leadership - Dimensions of Diversity - How to attract underrepresented minority candidates to your organization

Female Leadership Spotlight

Women have long served in many of National Fuel's top corporate levels. Our current Controller and Principal Accounting Officer, Elena Mendel, has worked at the Company for 30 years and held several leadership positions throughout her career.

“Positive mentorship offers meaningful and constructive advice, provides encouragement, and offers connectivity. I have had the privilege of working with strong mentors throughout my career that have helped me navigate balancing career and family. As the executive sponsor for FemaleFuel, I've encouraged mentorship for our female employees as they grow their careers at National Fuel.”

Elena Mendel
Controller and Principal Accounting Officer



Gender Diversity

As of December 31, 2022, the Company's workforce was 27.23% female and 72.77% male. The Company believes that numbers alone do not represent the whole picture, but they do inform management on the continued need to invest in and commit to improving our diversity and inclusion.

EEO-1 Job Category	2020 Female	2020 Male	2021 Female	2021 Male	2022 Female	2022 Male
Executive/Senior Level Officials	21.43%	78.57%	22.37%	77.63%	22.00%	78.00%
First/Mid-Level Officials	19.17%	80.83%	20.05%	79.95%	19.64%	80.36%
Professionals	34.13%	65.87%	32.88%	67.12%	31.98%	68.02%
Technicians	16.13%	83.87%	16.13%	83.87%	15.56%	84.44%
Craft Workers	5.56%	94.44%	4.55%	95.45%	4.22%	95.78%
Operatives	2.17%	97.83%	2.66%	97.34%	2.66%	97.34%
Laborers and Helpers	8.65%	91.35%	5.56%	94.44%	6.67%	93.33%
Administrative Support Workers	76.92%	23.08%	80.58%	19.42%	81.17%	18.83%

While 27% of the Company's workforce are women, 33% of active employees hired during 2022 were women, reflecting the Company's continued focus on improving diversity through hiring practices.

In assessing the Company's commitment to improve diversity, we understand that building an inclusive culture is important to diversity retention. As part of that assessment, the Company considers the average retention period for female employees versus their male counterparts. The average number of years employed by National Fuel as of December 31, 2022 is as follows:

Gender	Average Years of Service
Female	10.83
Male	9.57

Racial and Ethnic Diversity

National Fuel believes that measuring and sharing demographic data shows a commitment to our guiding principle of transparency and offers the Company the opportunity to show progress in the future. We continue to welcome key insights from our ERGs to help build positive cultural outcomes and promote inclusion. In 2022, the EDGE group benchmarked and proposed adding Martin Luther King Jr. day as a paid company holiday. Senior leadership agreed and beginning in 2023, MLK Day was added as a paid company holiday for the first time. Executive support for this proposal sent an important message to our employees and potential applicants. As of December 31, 2022, the Company's workforce was 8.10% racially and ethnically diverse.

EEO-1 Job Category	Asian	Black/ African American	Hispanic/ Latino	Other ¹	White
2020					
Executive/Senior Level Officials	0.00%	1.95%	0.65%	0.00%	97.40%
First/Mid-Level Officials	0.55%	1.39%	1.67%	0.28%	96.11%
Professionals	2.67%	1.07%	2.93%	0.80%	92.53%
Technicians	0.00%	1.61%	4.84%	0.00%	93.55%
Craft Workers	0.00%	3.33%	0.56%	1.67%	94.44%
Operatives	0.00%	1.63%	2.36%	1.09%	94.93%
Laborers and Helpers	0.00%	13.46%	2.89%	0.00%	83.65%
Administrative Support Workers	0.24%	15.63%	3.36%	0.72%	80.05%
2021					
Executive/Senior Level Officials	0.00%	1.97%	0.66%	0.00%	97.37%
First/Mid-Level Officials	0.51%	1.54%	1.29%	0.26%	96.40%
Professionals	3.26%	1.90%	2.72%	1.09%	91.03%
Technicians	0.00%	1.61%	4.84%	0.00%	93.55%
Craft Workers	0.00%	3.41%	0.57%	1.70%	94.32%
Operatives	0.00%	1.24%	2.66%	1.24%	94.86%
Laborers and Helpers	0.00%	14.45%	1.11%	1.11%	83.33%
Administrative Support Workers	0.49%	13.83%	3.16%	0.24%	82.28%
2022					
Executive/Senior Level Officials	0.00%	2.00%	0.67%	0.00%	97.33%
First/Mid-Level Officials	1.02%	2.30%	1.53%	0.25%	94.90%
Professionals	2.44%	2.44%	2.71%	1.08%	91.33%
Technicians	0.00%	2.22%	0.00%	0.00%	97.78%
Craft Workers	0.00%	3.61%	1.21%	1.81%	93.37%
Operatives	0.17%	1.42%	1.42%	0.89%	96.10%
Laborers and Helpers	0.00%	7.78%	0.00%	1.11%	91.11%
Administrative Support Workers	0.98%	13.69%	4.16%	0.49%	80.68%

¹ Other includes the following classifications: Native American or Alaska Native, Native Hawaiian or Pacific Islander, and Two or More Races.

While only 6.65% of salaried employees were racially and ethnically diverse, 13.58% of newly hired salaried employees in 2022 were racially and ethnically diverse. We recognize there is more work to be done, but we are encouraged that the diversity and inclusion initiatives introduced will bring even more representation amongst these demographics. For example, in 2022, through development, promotions and focused recruitments, the Company was able to more than double the representation amongst black men in salaried roles at National Fuel. Like gender diversity, the Company considers the average retention period for racial and ethnic minorities. The average number of years employed by the Company as of December 31, 2022 is as follows:

Race/Ethnicity	Average Years of Service
Black/African American	10.76
White	9.95
Hispanic/Latino	9.12
Other ¹	8.06
Asian	5.20

Multi-Generational Workforce

The Company is also committed to fostering an inclusive work environment where our multi-generational workforce can succeed. National Fuel offers family-friendly programs to promote flexibility, where possible, without interfering with business operations. For example, National Fuel allows flexible time to begin and end the workday and alternative work schedules, which help employees

balance work and personal commitments. Additionally, the Company's parental leave policy and paid family leave benefits provide flexibility, if needed, to care for a family member.

Age	2020	2021	2022
56 and older	16.16%	15.00%	14.78%
41-55 years old	33.27%	33.39%	32.45%
26-40 years old	43.08%	44.83%	45.49%
25 and younger	7.49%	6.78%	7.28%

Pay Equity

National Fuel continuously focuses on providing pay equity for all employees. As part of this focus, the Company has implemented the following practices:

- Salary history is not requested from job applicants so as to prevent perpetuating prior pay disparity.
- Human Resources conducts a comprehensive pay analysis for each new hire, which includes an internal equity review for those performing similar functions.
- An external consultant provides regular benchmark salary data for job functions.
- Annual salary increases and promotion recommendations are developed within Human Resources and reviewed through senior leadership to ensure equity and consistency across business units.

¹ Other includes the following classifications: Native American or Alaska Native, Native Hawaiian or Pacific Islander, and Two or More Races.

Supplier Diversity

Improving supplier diversity is an integral part of our commitment to promoting a more diverse environment and reflecting the communities we serve. National Fuel continues to update the Company's database of active suppliers, which has been customized to track supplier diversity statuses where suppliers have self-identified in one of the following classifications:

- Minority Business Enterprises
- Women-Owned Business Enterprises
- LGBTQ+ Business Enterprises
- Service Disabled/Veteran Business Enterprises
- Disability/Physically Challenged-Owned Business Enterprises



Supplier Inclusion Reinforced Through Policies

In 2022, National Fuel implemented procedural changes to its Procurement Manual, which governs the procurement of all goods, materials and services across the Company. These procedural changes reinforce the Company's commitment to supplier diversity while applying a diversity and inclusion lens as employees perform their job functions.

- Supplier diversity statuses are recognized and considered during procurement process.
- Diversity is embedded and prioritized in the Company's supplier identification and on-boarding processes.
- On a pilot basis, National Fuel is promoting accelerated payment terms for diverse suppliers to alleviate growth challenges they may face with respect to gaining access to working capital.

“I’m excited to use my energy and enthusiasm to raise awareness about the value of developing a diverse supply chain that reflects and strengthens the communities where we operate. I believe that connecting with people while building and maintaining relationships are essential to growing our group of diverse suppliers.”

Amado Sosa
Buyer, Purchasing Department

Supply Chain Initiatives Focused on Diversity

2022 D&I Supply Chain Initiatives	Progress
Supplier Communications	<ul style="list-style-type: none"> Suppliers contacted at on-boarding through mailings (e.g., the Company's D&I postcard) and in day-to-day interactions to update key supplier information and diversity statuses. Annual mailings that relay Company expectations with respect to the Supplier Code of Conduct Policy and Labor & Human Rights Policy.
Strategic Supplier Sourcing Program	<ul style="list-style-type: none"> Focused on identifying actionable business opportunities for diverse suppliers. Identifies suppliers for this initiative via matchmaker meetings facilitated by industry organizations and councils. Since inception in December 2021, 1,042 purchase orders have been issued under the Program, corresponding to more than \$3 million of incremental business opportunities awarded to diverse suppliers.
Leveraging Partnerships	<ul style="list-style-type: none"> Continuing to build affiliations and partner with external organizations to promote the importance of utilizing diverse suppliers while leveraging these relationships to identify new suppliers.
Internal Initiatives and Training Programs	<ul style="list-style-type: none"> Purchasing team received performance appraisal goals related to supply chain diversity and inclusion initiatives. Currently developing a training program focused on the importance of doing business with diverse suppliers, which will be rolled out to appropriate employees across the Company whose roles relate to National Fuel's supply chain.



In 2022, National Fuel did business with **152 diverse suppliers**, resulting in a total of 4,584 transactions.

Diversity supplier spending during calendar year 2022 was **\$31.0 million**, which is the highest annual spending level in program history!¹

Human Capital – Labor Practices

National Fuel respects its employees' rights to self-organization: to form, join or assist labor organizations, to bargain collectively through representatives of their own choosing, and to engage in other concerted activities for the purpose of collective bargaining or other mutual aid or protection, as well as their right to refrain from any or all such activities, without fear of reprisal, intimidation or harassment.

As of December 31, 2022, 47.9% of the Company's active workforce was covered under collective bargaining agreements. During calendar year 2022, National Fuel did not incur any work stoppages (strikes or lockouts) and therefore experienced zero idle days for the year.

¹ Based on records dating back to February 2001.

Serving Our Customers and Communities

For more than 120 years, National Fuel has been the hometown energy team, providing safe, reliable and affordable gas service to the communities where we live and work. Our relationships with our customers and local communities are central to our mission and ongoing success as a Company.

Serving Our Customers

Quality Customer Service

We strive to deliver quality service that our customers expect and deserve. National Fuel employees promptly answer our customer service calls in facilities located in the Downstream Segment's service territory - not an automated voice or an overseas call center. Distribution Corporation's telephone response rates have ranked among the best for utilities in both New York and Pennsylvania. As a result of this customer-driven approach, we have achieved high levels of utility customer satisfaction and a remarkably low customer complaint rate. In fiscal year 2022, our Downstream Segment achieved a 92% residential customer satisfaction rate in New York and a 90% rate in Pennsylvania.

Service Affordability

Our Downstream Segment has been successful in keeping natural gas utility service affordable for our customers. Our utility customers have seen the direct benefit of regional natural gas shale development in the form of lower energy costs. U.S. Energy Information Administration ("EIA") analysis found that in 2021, the Company had the lowest residential delivery gas rate in New York and Pennsylvania and ranked #1 and #3, respectively, in the entire northeastern United States. Distribution Corporation, with the support of the New York and Pennsylvania state commissions, has also prioritized the development and administration of programs designed to reduce energy costs for low-income utility customers. See [Energy Affordability](#) for more information about these programs. Within the Company's operating territory, where low temperatures are the norm for the coldest months of the winter, the need for reliable, weather-hardened infrastructure is critical to serve the energy needs of the region. The resiliency of the Company's delivery systems, coupled with access to affordable energy supplies due to regional shale development, ensures that the Company continues to provide affordable and reliable service to our customers.

Service Reliability

Distribution Corporation's success in serving utility customers depends heavily on the depth of its storage and transportation portfolio, as well as the reliability of upstream pipelines to provide these services. Given their vital role in the overall gas supply picture, storage services are particularly critical to the successful operation of any utility. Distribution Corporation currently subscribes approximately 30 Bcf of storage capacity on Supply Corporation, which allows competitively priced gas to be stored economically until it is needed to serve markets in times of high demand.

Through careful system planning and operation, our Midstream Segment met firm storage and transportation service obligations with near 100% reliability during fiscal year 2022. Neither Supply Corporation nor Empire issued a single Operational Flow Order (OFO) during the winter of 2021-2022 and served peak demand without incident. This high level of reliability ensures that all on- and off-system customers have the tools necessary to meet market demand throughout the year, and most importantly, provides dependable service to utility customers during peak winter conditions when they need it most.

Keeping the Community Safe Through a Winter Storm

Our longstanding focus on safety and reliability when providing critical energy supplies to customers was never more apparent than at the end of December 2022, when the northeast braced for a multi-day winter storm. Distribution Corporation's New York territory was pummeled by extreme lake effect snow, ice and wind that created dangerous conditions for tens of thousands of people without power and left individuals stranded in their homes.



More than **50" of snow accumulated** over 4 days with hurricane force winds.



Minimal customer utility outages (~15) throughout the storm.

As Western New York's electric system saw extensive impacts and prolonged customer outages during the storm, Distribution Corporation experienced 15 customer natural gas utility outages. Supply Corporation and Empire met all firm commitments during the storm, thereby ensuring the safe and reliable delivery of natural gas to the markets that needed it most. Additionally, both pipeline systems provided significant mutual aid to interconnecting pipelines that encountered operational challenges on their own systems. In doing so, Supply Corporation and Empire's contributions to energy reliability during peak conditions reached farther than its own market area and had a positive impact on the northeast region as a whole.

The front-line crews at National Fuel worked tirelessly to assist customers who were struggling in the aftermath of the storm. It was a true team effort with employees from Operations, Gas Dispatch, Consumer Business and Safety departments keeping the gas flowing, our customers safe and their calls answered. Similarly, Seneca and Midstream operations teams exemplified teamwork to the strongest degree while managing their way through Winter Storm Elliott. In spite of sustained wind chill temperatures below negative 30 degrees, the segments saw limited production impacts, with any volumes offline being brought back on very quickly. This is a testament of the entire team who collectively kept the production flowing in very challenging conditions.

"National Fuel prepared me with the necessary tools, training and procedures to safely respond to emergency calls across our territory and help our customers in the harshest of conditions."

Byron Banks
Field Service Representative



Serving Our Communities

Corporate Philanthropy

In 2022, the National Fuel Gas Company Foundation (Foundation) and our employees supported the communities where we live and work by donating more than \$2.5 million. The Foundation is a 501(c)(3) private foundation funded entirely by shareholders. The Foundation's Pillars, or areas of giving focus, were realigned at the beginning of 2023 to include:



Community Enrichment & Safety – Improve community safety, foster inclusion, promote diversity and enrich the overall quality of life in our communities.



Education – Develop a sustainable energy workforce through projects that advance STEAM (Science, Technology, Engineering, Arts and Mathematics) education and prepare students to compete in the workforce.



Environmental Stewardship – Support the preservation of natural resources, environmental education, watershed protection, emissions reduction and environmental enhancements.



Veteran Services – Fund support services that directly benefit veterans and active service members and their families.

Employee Charitable Giving Program

The Foundation's Employee Charitable Giving Program aligns a large portion of National Fuel's charitable support with the wishes and generosity of our employees. Through this gift program, the Foundation matches employee donations to their chosen nonprofits, dollar for dollar. Open enrollment for the 2023 program year saw an increase in participation, surpassing 1,000 employees for the first time since 2013, with employee participation at just under 50% - an increase from 43% in the 2022 program year. The Company has also announced an increase of the maximum grant match up to \$1,000 for the coming year.

National Fuel also supports numerous fundraisers held by local nonprofits each year and participates in various community programs and events, professional associations, chambers of commerce and business development groups.

Fuelin' Good ²⁰²³



Since its inception in 2005, the Foundation and our employees have given more than \$24 million to more than 800 organizations.



The number of Employee Charitable Giving Program participants is the highest it's been in 10+ years.

Community Involvement

Faces of Fuel Volunteer Program

To further align our community support and investments, National Fuel's Faces of Fuel volunteer program provides opportunities for employees to participate in philanthropic efforts in their local communities. Volunteers participate in a variety of activities — from building beds for local families, to biking, running, and even bowling for great causes. National Fuel employees are willing to help wherever there is a need.

Seneca Serves

In 2022, Seneca Resources formally branded its employee-driven volunteer program entitled “Seneca Serves,” which encourages employees to give back to the communities in which they live and Seneca operates. Employees have donated their time and raised funds for local non-profits and charitable organizations across our operations through food and clothing drives, serving meals at shelters, volunteering at children’s hospitals, and beautification projects.

Introduce a Girl to Engineering Day

Seneca partnered with Carnegie Science Center’s “Tour Your Future” program to introduce girls to STEM-related careers in the natural gas industry. Seneca welcomed girls ages 11-17 to its Cranberry, Pa. office, where they got to hear from Seneca’s team of engineers, geologists, and environmental, health and safety experts about how natural gas is discovered and produced in a responsible way.



Days of Doing

As an extension of the Company's Faces of Fuel volunteer program, National Fuel launched Days of Doing, a three-day community service event. Days of Doing was hosted in the fall of 2022, and again in the spring of 2023 leading up to Earth Day. Days of Doing provided employees the opportunity to volunteer during work hours with a variety of nonprofits throughout the Company's New York and Pennsylvania service territory.

Volunteer projects focused on assisting food banks as well as indoor and outdoor cleanup efforts. The National Fuel Gas Company Foundation provided Days of Doing nonprofits with grants to match volunteer efforts.



Days of Doing Gets it Done



Employee Participation

2022 – 350
2023 – 500



Value of Service Hours¹

2022 – \$36,000
2023 – \$63,600



Total Hours Donated

2022 – 1,200
2023 – 2,000



Foundation Grants Awarded

2022 – \$20,000
2023 – \$25,000

2022

Project Focus: Food Banks;
Indoor/Outdoor Cleanups

2023

Project Focus: Environmental
Stewardship/Beautification

¹ Calculated using estimated national value of each volunteer hour as determined by independentsector.org for 2021 and 2022.



Our Environmental Justice Focus

In addition to supplying reliable and affordable natural gas, the Company recognizes its important role in protecting the environment and the communities where we operate. The Company supports the goals of environmental justice of identifying and addressing disproportionate adverse human health or environmental effects and cumulative impacts of its operations on minority populations and low-income populations. We are committed to identifying and addressing the needs of these communities, which includes the fair treatment and meaningful involvement of all people regardless of race, color, national origin or income. For example, National Fuel identifies environmental justice areas using available online screening tools, including EPA's EJScreen, and we route around/avoid these areas to the greatest extent practicable when designing and routing a new pipeline project.

In connection with implementation of its climate legislation, New York has developed a list of disadvantaged communities (DACs). Several of these communities are located in the utility's service territory, where the median household income for a number of communities is below the national average. The utility will target many of its clean energy and energy efficiency initiatives to benefit DACs.

We understand that every environmental justice community has its own unique needs, and we expect that our approach to environmental justice will evolve as we continue to interact with these communities and receive guidance from new government regulations and policies.



Seneca Serves was on hand to assist the kids with releasing 140 trout fish eggs into the waters of Stony Fork Creek in Wellsboro, Pennsylvania as part of the "Trout In The Classroom Project."

Downstream



SAFE. RELIABLE. AFFORDABLE. SUSTAINABLE.

“ Natural gas and its storm-resistant underground delivery system has an essential role to play in the energy transition. We believe the most responsible emissions reduction pathway prioritizes affordability, reliability and resiliency of energy delivery systems, while continuing to assure safe and sustainable operations. ”

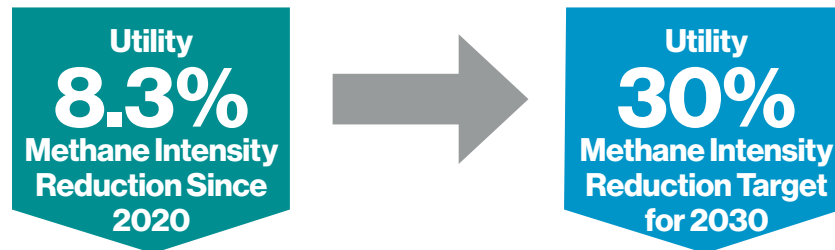
Donna DeCarolis
President of National Fuel Gas Distribution Corporation



Greenhouse Gas Emissions

For nearly 120 years, National Fuel and its employees have been committed to operating safely and responsibly as important members of our local and national communities. One of our six guiding principles is Environmental Stewardship, which reflects our understanding of our vital role in upholding standards of environmental protection. In furtherance of this principle, in 2021, Distribution Corporation, along with National Fuel's other business segments, announced methane emissions intensity targets. Distribution Corporation has made meaningful strides towards its target goal of a 30% reduction in methane intensity by 2030.

Progress Towards 2030 Methane Emissions Intensity Target (2020 Baseline)



Additionally, each of National Fuel's subsidiaries, including Distribution Corporation, made independent emissions reduction commitments under the U.S. Environmental Protection Agency's (EPA)'s Methane Challenge Program by entering into partner agreements with the EPA in 2018. This voluntary program promotes and tracks ambitious, transparent commitments to reduce methane emissions beyond regulatory requirements.

These agreements outline National Fuel's commitment to methane mitigation that include measures strategically selected for each of the business units based on the unique aspects of their operations and emissions sources. As part of the Methane Challenge, Distribution Corporation has committed to:

- Replacing or retiring cast/wrought iron and unprotected steel mains at an average rate of 3% per year for the period 2019 to 2023. With respect to leak-prone pipe, in 2022, Distribution Corporation reduced its inventory of unprotected steel mains by 7.0% and cast/wrought iron mains by 7.5%. Our overall reduction of these facilities was 7.1%. Distribution Corporation removed its last piece of cast iron pipe from the ground in 2023.
- Replacing or retiring unprotected steel services when leaking or when the associated main is replaced/retired. Our reduction in unprotected steel services in 2022 was 6.1%.

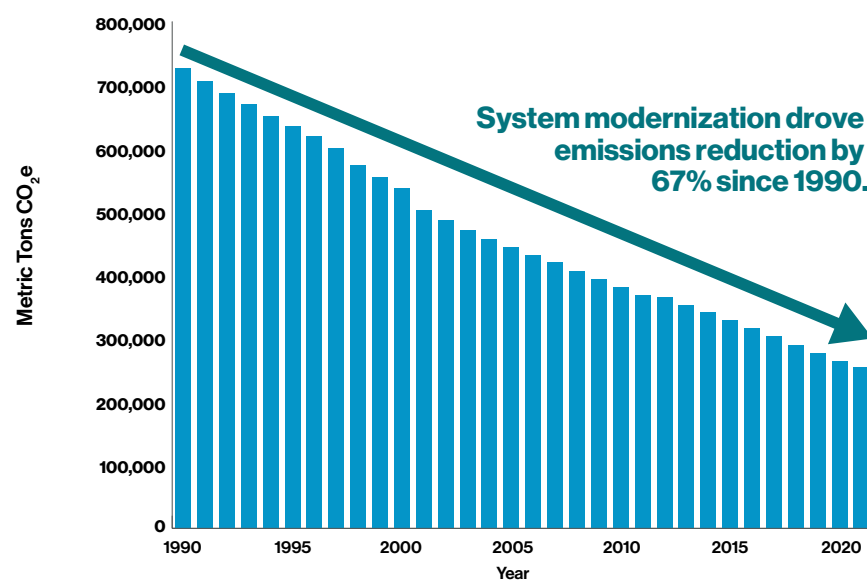
In addition to the Methane Challenge goals, in 2021, Distribution Corporation set GHG emissions reduction targets of 75% by 2030, and 90% by 2050, from 1990 levels for its utility distribution system, driven by its ongoing system modernization efforts, including continued replacement of older vintage mains and services.¹

¹ Baseline emissions and emissions reduction target for Scope 1 emissions are calculated pursuant to the reporting methodology under the United States Environmental Protection Agency's GHG Reporting Program (current Subpart W), primarily Distribution pipeline mains and services.

Utility EPA Subpart W Emissions¹

Estimated Emissions as CO₂e [AR5]

1990-2022: Mains & Services



¹ CO₂e values for Utility Scope 1 Subpart W Emissions for pipeline mains and services have been calculated in accordance with the published 100-year time horizon global warming potential values from the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (AR5, 2014) as preferred by SASB, as opposed to using the IPCC Fourth Assessment Report (AR4) as required by the U.S. EPA, which is approximately 12% lower on a CO₂e basis.

Scope 1 Greenhouse Gas Emissions (Metric Tons CO ₂ e) ²		2020	2021	2022
Utility (NY)	EPA Subpart W Mandatory Reporting (NY) ³	171,000	163,165	154,240
	Additional EPA Subpart W Facilities (NY) ^{4,5}	1,556	1,505	1,373
	Other Sources (NY) ⁶	65,502	65,560	65,619
	Total Utility (NY)	238,058	230,230	221,232
Utility (PA)	EPA Subpart W Mandatory Reporting (PA)	96,861	94,088	90,742
	Additional EPA Subpart W Facilities (PA)	110	0	198
	Other Sources (PA)	30,226	30,190	30,312
	Total Utility (PA)	127,197	124,278	121,253
Utility (All)	EPA Subpart W Mandatory Reporting (All)	267,861	257,253	244,982
	Additional EPA Subpart W Facilities (All)	1,666	1,505	1,571
	Other Sources (All)	95,728	95,750	95,931
	Total Utility (All)⁷	365,256	354,508	342,484

² Revised NY LDC M&R (2020-2021) – moved from 'Other Sources' to 'Subpart W Mandatory' and uses emission factors specific to NY.

³ Emissions subject to the Greenhouse Gas Mandatory Reporting program (40 CFR Part 98, Subpart W) include mains, services, M&R stations, and large combustion units in the natural gas distribution segment (LDC's).

⁴ Additional EPA Subpart W Facilities (NY) 2020 and 2021 values are restated to account for error in gathering equipment leak calculation.

⁵ Includes emissions from: 1) National Fuel Gas Distribution Corporation-owned transmission pipeline and gathering segments that are subject Subpart W, but do not meet the reporting threshold, 2) Blowdown emissions are included from the transmission pipeline segment, and 3) in the gathering segment, emissions from blowdowns, dehydrator vents and equipment leaks.

⁶ Other Sources include emissions from sources not subject to EPA reporting. Sources include customer meters, pressure relief valves, blowdowns (LDC), dig-ins, pipeline leaks (transmission), small combustion units, fleet and natural gas space heating.

⁷ Total values between charts may vary slightly due to conventional rounding.

Scope 1 Methane Emissions (Metric Tons CH ₄)		2020	2021	2022
Utility (NY)	EPA Subpart W Mandatory Reporting (NY) ¹	6,099	5,820	5,502
	Additional EPA Subpart W Facilities (NY) ²	56	54	49
	Other Sources (NY) ³	2,105	2,091	2,097
	Total Utility (NY)	8,260	7,964	7,648
Utility (PA)	EPA Subpart W Mandatory Reporting (PA)	3,456	3,356	3,237
	Additional EPA Subpart W Facilities (PA)	4	0	7
	Other Sources (PA)	963	953	955
	Total Utility (PA)	4,423	4,309	4,199
Utility (All)	EPA Subpart W Mandatory Reporting (All)	9,555	9,176	8,739
	Additional EPA Subpart W Facilities (All)	60	54	56
	Other Sources (All)	3,068	3,044	3,053
	Total Utility (All)⁴	12,683	12,273	11,847

Scope 2 Emissions (MT CO₂e)

	2020	2021	2022
New York	730	603	534
Pennsylvania	552	506	452
Utility (All)	1,282	1,109	986

- 1 Emissions subject to the Greenhouse Gas Mandatory Reporting program (40 CFR Part 98, Subpart W) include mains, services, M&R stations and large combustion units in the natural gas distribution segment (LDC's).
- 2 Includes emissions from: 1) National Fuel Gas Distribution Corporation-owned transmission pipeline and gathering segments that are subject Subpart W, but do not meet the reporting threshold, 2) Blowdown emissions are included from the transmission pipeline segment, and 3) in the gathering segment, emissions from blowdowns, dehydrator vents and equipment leaks.
- 3 Other Sources include emissions from sources not subject to EPA reporting. Sources include customer meters, pressure relief valves, blowdowns (LDC), dig-ins, pipeline leaks (transmission), small combustion units, fleet and natural gas space heating.
- 4 Total values between charts may vary slightly due to conventional rounding.
- 5 Pennsylvania defines residual waste as non-hazardous industrial waste.

Ecological Impacts

At National Fuel, we strive to meet the needs of our customers through the safe and reliable delivery of natural gas. We regularly complete projects to modernize and upgrade our pipeline facilities, during which we employ robust and effective environmental management policies and practices. In addition, these construction activities often entail significant coordination with local, state and federal authorities, including environmental agencies. See [Environmental Management Policies and Practices](#).

Waste Management

Corporate Waste Management Program

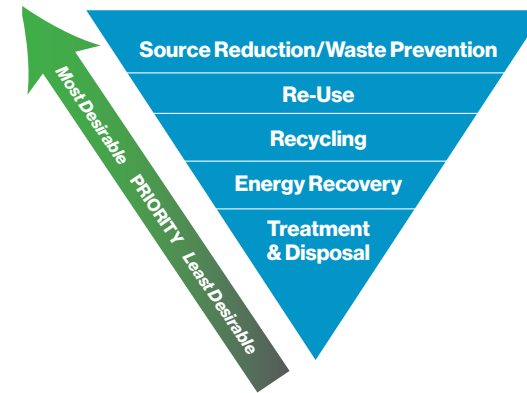
In furtherance of our [Environmental Stewardship](#) guiding principle, National Fuel is committed to reducing the quantity of waste, both hazardous and non-hazardous, generated through our operations. To this end, the Company tracks the wastes generated at its facilities and evaluates ways to reduce the rate of, or eliminate where possible, the generation of certain wastes. Our routine business operations generate various types of waste, including:

- Universal waste (e.g., used batteries, fluorescent light bulbs);
- Hazardous liquids and solid waste (e.g., spent solvents, hydrocarbon liquids);
- Used oil;
- Construction and demolition debris;
- Scrap steel; and
- Non-hazardous waste and residual waste⁵ (e.g., brine, glycol).

Executive level oversight is incorporated into the Company's waste minimization plans to further highlight the level of importance the Company places on waste management. Management requires every employee to comply with all applicable environmental and waste management regulations issued by federal, state and local agencies. Additionally, employees are encouraged to promote new ideas for waste minimization, energy conservation and protection of the environment.

Our Risk Environmental Department manages waste streams from our core operations in the Company's Downstream and Midstream Segments, including waste characterization, tracking and disposal. The EPA requires generators of hazardous wastes to determine the waste generator status of each facility based on the amount of waste generated in a calendar month. Most of our Downstream and Midstream locations either do not generate any hazardous wastes or small amounts of hazardous wastes, placing them in the *Very Small Quantity Generator*¹ category. Occasionally, a facility may generate enough hazardous waste to meet the *Small Quantity Generator*² or *Large Quantity Generator*³ threshold, however, those instances are rare and are often an episodic event. Based on total weight of solid wastes and total volume of liquid wastes generated in 2022, substantially all (more than 98%) of the wastes generated in the Downstream and Midstream segments were non-hazardous.

In addition to monitoring waste-related data, the Company evaluates ways to reduce or eliminate waste generation as opportunities are identified. We have adopted the EPA's Waste Management Hierarchy to prioritize waste minimization preferences.



- **Source Reduction/Waste Prevention:** National Fuel's commitment to waste reduction begins with the practice of reducing or eliminating the waste altogether by product substitution, inventory control, good housekeeping, equipment maintenance and equipment and technology upgrades. Operational personnel who generate and manage wastes are trained in the proper waste handling, marking and storage. In addition, the Company has specific written procedures for the management of several waste types. We reduce and prevent waste sources through effective vendor selection, periodic product evaluations, product substitutions and inventory control.
- **Re-use:** National Fuel encourages product re-use through periodic inventory assessments and environmental audits. These assessments have identified products that are no longer of use at one location but may be of need at another. Re-use alternatives also include the sale or transfer of unneeded products or wastes to a product broker/recycler. Re-use varies from simple repurposing of a used item to regenerating of fluids used in our gas system equipment.

1 Generate no more than 100 kg (220 lbs) of hazardous waste; or 1 kg (2.2 lbs) of acutely hazardous waste in a calendar month.
 2 Generates more than 100 kg (220 lbs) and less than 1,000 kg (2,200 lbs) of hazardous waste, or 1 kg (2.2 lbs) of acutely hazardous waste in a calendar month.
 3 Generates more than 1,000 kg (2,200 lbs) of hazardous waste, or greater than 1 kg (2.2 lbs) of acutely hazardous waste in a calendar month.

- **Recycling:** When waste prevention, source reduction and product re-use are not possible, the Company minimizes wastes through recycling. Recycling can occur either in-house, onsite or off-site at a recycling facility. A large majority of our waste streams are recycled including used batteries, fluorescent light bulbs, used oil, electronic equipment and scrap steel.
- **Treatment:** Treatment can range from simple physical separation of multiphase liquids to chemical treatments of wastes to render them less hazardous or non-hazardous. An example of the treatment methodologies we incorporate into our waste management processes include the decanting of natural gas condensates, which involves separating the water from the hydrocarbon/oil.
- **Disposal:** When the other options within the waste management hierarchy are not feasible, the waste is either incinerated, injected, or discharged through appropriate permitting, or as a last resort landfilled.

The [Waste Management](#) and [Water Management](#) sections further discuss the processes our Upstream Segment uses to manage waste streams and reuse produced water.

Waste Generated

National Fuel understands the importance of proper waste management and the need to produce an effective program to mitigate adverse environmental impacts. National Fuel's Risk Environmental Department continuously evaluates the waste generated in our Downstream and Midstream segments to choose the optimum disposal method for each waste stream. In 2022, these continued efforts to find the best waste management methods have resulted in:

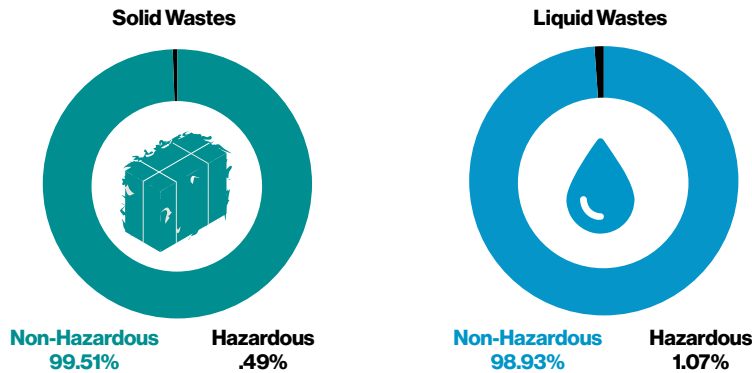


- **Recycling of 75%** (1,277 metric tons) of non-hazardous solid wastes. That's over 2.8 million pounds of waste diverted from landfills.
- **Less than 25%** of our solid wastes (hazardous and non-hazardous combined) are landfilled.
- **Greater than 94%** of non-hazardous liquid wastes are recovered, recycled and reused.

Downstream and Midstream Waste Summary for 2022¹

Solid Waste ²	Management Method	Weight (MT)	% by Category	% of All Waste Generated
Hazardous	Incineration	4.63	55.38%	0.49%
	Landfill	2.61	31.22%	
	Recovery	0.32	3.83%	
	Recycled	0.80	9.57%	
	Hazardous Total	8.36		
Non-Hazardous	Incineration	18.16	1.07%	99.51%
	Landfill	400.77	23.58%	
	Recovery	3.76	0.22%	
	Recycled	1,277.25	75.13%	
	Non-Hazardous Total	1,699.94		
Total Solid Waste		1,708.30		

Liquid Waste ³	Management Method	Quantity (bbl)	% by Category	% of All Waste Generated
Hazardous	Incineration	189.00	83.31%	1.07%
	Landfill	5.24	2.31%	
	Recovery	30.00	13.22%	
	Recycled	1.31	0.58%	
	Reuse	1.31	0.58%	
	Hazardous Total	226.86		
Non-Hazardous	Incineration	1,159.93	5.55%	98.93%
	Landfill	17.02	0.08%	
	Recovery	16,464.08	78.76%	
	Recycled	870.76	4.17%	
	Reuse	2,392.55	11.44%	
	Non-Hazardous Total	20,904.34		
Total Liquid Waste		21,131.20		



Management Method	Quantity (bbl)	% by Category
Deep Well Injection	242,950.07	69.73%
Recovery	26,961.97	7.74%
Reuse	78,505.73	22.53%
Total Produced Water	348,417.77	

1 Our Risk Environmental Department reconciles our waste data against completed manifests, third party invoices, and USEPA databases for the values reported. When measured values are not available, assumptions and/or estimations are used. When measured volumes of liquid wastes are not provided by the treatment, storage, and disposal facilities, the maximum volume of the waste container is used when quantifying the waste. This may result in an over estimation of the actual wastes generated.

2 Solid waste generated are based on physical state of waste and not the definition of Solid Waste as per 40 CFR § 261.2. Clean soil construction and demolition debris generated by Downstream Segment are not included in the reported solid waste values.

3 Liquid waste does not include produced water.

4 Produced water attributable to Midstream Segment, primarily Midstream Company and Supply Corporation.

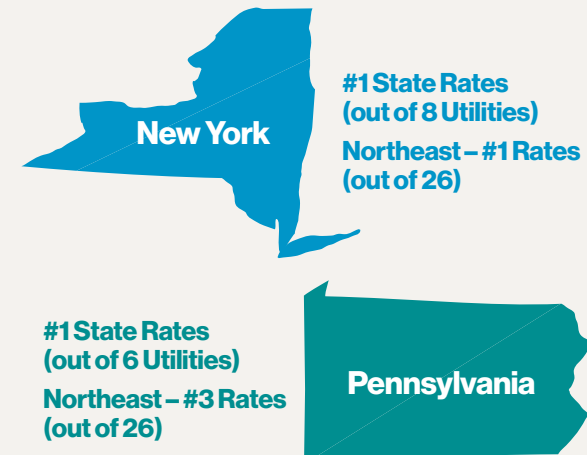
Energy Affordability

Distribution Corporation has a strong record of safely, reliably and affordably delivering natural gas to its customers, even during the most extreme weather events. An analysis of data published by the Energy Information Administration (EIA) found that in 2021 the Company had the lowest residential delivery rate in New York and Pennsylvania, and ranked #1 and #3, respectively, for affordability in the entire northeastern United States.¹ Additionally, natural gas has also consistently ranked as the most affordable energy source within our service territories. Within Distribution Corporation's New York and Pennsylvania service territories, the Company provides natural gas service to approximately 93% and 84% of households, respectively. Distribution Corporation, in conjunction with the state commissions in both NY and PA, continues to focus on just and reasonable rates for our customers. As poverty rates in our service territories are above the national average, reliable access to affordable energy supplies is, and will continue to be, critical to promoting the welfare of the communities we serve and ensuring energy equity for all of our customers.

Our utility customers continue to benefit directly from Appalachian shale development, which has improved the availability and affordability of natural gas supplies. Distribution Corporation has also efficiently managed its utility systems, limiting the occurrence of delivery rate increases. Since 2009, the average retail residential customer in our New York and Pennsylvania service territories has seen a decrease of \$250 and \$402, respectively, on their annual natural gas bills. These savings help to reduce the economic burden of energy for our customers and bolsters the local economies.

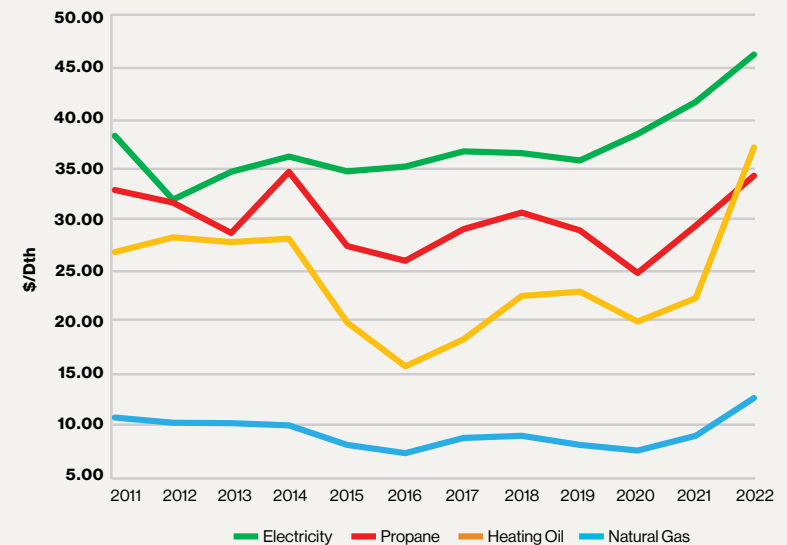
¹ EIA's analysis calculates price as total revenues divided by sales volume. Reported revenues are based on volumes sold and delivered directly to the end-user. Revenues are gross, including any and all demand charges, commodity charges, taxes, surcharges, adjustments or other charges billed for gas delivered.

Focus on Affordability



Affordability of Natural Gas

Combined Service Territory Average Residential Rates
2011-2022 \$/Dth Equivalent



Electricity is 3 – 4.5 times more costly than natural gas.

External Factors Impacting Affordability

There are several external factors outside of our Downstream Segment's direct control that can impact the affordability of natural gas and/or Distribution Corporation's utility services. The following is a discussion of the nature of these external factors and the potential impact on this Segment.

Regional Economic Conditions

Our Downstream Segment's utility service territories are in Western New York and northwestern Pennsylvania, principally serving the Buffalo, New York and Erie, Pennsylvania metropolitan markets. While these markets have experienced some modest improvement after an extended period of economic decline that started in the 1970's, the Buffalo and Erie markets have historically lagged most of the larger U.S. markets in several key economic factors shown in the following table.

	Buffalo-Niagara, NY		Erie, PA		New York State	United States
	Region	City	Region	City		
Median Household Income ¹	\$61,706	\$42,186	\$55,949	\$40,201	\$75,157	\$69,021
Poverty Rate ²	13.4%	27.6%	15.8%	24.7%	13.9%	11.6%
Unemployment Rate ²	3.2%		4.2%		4.1%	3.5%

Additionally, the impacts of COVID-19 continued to weigh on the economies for both regions through 2022. Distribution Corporation recognizes that some of our customers dealt with financial hardships during the pandemic. As a result, and consistent with legislation in New York and guidance from state regulators, Distribution Corporation suspended service disconnections in 2021 and offered

customers flexible repayment agreements, waived late fees when requested, and reconnected services that had been previously disconnected. Additionally, in 2022 and 2023, as directed by the NY PSC, National Fuel implemented a two-phase Bill Relief Program to assist customers with past due balances for services through May 1, 2022. Phase 1, which was issued on June 16, 2022, offered \$13.7 million in credits to low-income residential customers to pay past-due balances. Phase 2, issued on January 19, 2023, offered \$9.7 million in credits to residential and small commercial customers that did not previously benefit from Phase 1 and had past-due accounts for service through May 1, 2022.

Commodity Prices

Costs to purchase, transport, store and deliver natural gas supplies are passed along to Distribution Corporation's customers through a commodity supply charge. Volatility in national and regional commodity markets, upstream disruptions in the natural gas supply chain, pipeline constraints, and general imbalances in supply and demand have the potential to increase the cost of natural gas supplies and ultimately the rate charged to customers as natural gas is consumed.

Weather

Our service territories are known for harsh winters. Of our customers served within New York and Pennsylvania, 83% and 73% use natural gas to heat their homes, respectively.³ As a result, a colder than normal winter generally increases customer consumption and has the potential to increase a customer's average bill through higher natural gas supply and delivery charges. Additionally, extreme weather has the potential to generate price spikes on natural gas supplies purchased in

¹ July 2022 figures from U.S. Census Bureau.

² December 2022 figures from the Bureau of Labor Statistics.

³ Data from 2021 residential market study conducted by JRB Insights Market Research Services.

daily spot markets to meet the increased customer demand in both New York and Pennsylvania. The Company's tariffs include a weather normalization adjustment ("WNA") mechanism. The WNA mechanisms, which cover an eight-month period during the winter heating season, have a stabilizing effect on customers' bills and utility revenues while mitigating the potential for the Company and its customers to materially benefit from or be burdened by higher/lower usage resulting from colder- and warmer-than-normal weather.¹

Additionally, each year Distribution Corporation engages in a comprehensive winter planning process in both New York and Pennsylvania to ensure that our Downstream Segment has adequate pipeline capacity, supplies in storage and long-term purchase contracts in place to meet the anticipated winter demand, including the coldest winter day. Distribution Corporation's planning process ensures supply reliability while reducing the risk of potential commodity price spikes. In November and December 2022, our service territory in Western New York experienced snow and blizzard storms that caused major power outages. Our system demonstrated the reliability needed to serve our customers, as many were able to keep warm with gas-powered equipment, such as fireplaces. As we prepare for more frequent and severe weather events such as these, it is imperative that we continue to serve our customers with minimal interruptions.

Regulation

Our Downstream Segment's delivery rates are regulated and set by the state utility commissions in New York and Pennsylvania. While the rate setting process is designed to produce rates that are just and reasonable for all customers, the ratemaking process is subject to political and policy influences that may apply upward pressure on customer rates. There are several other circumstances where legislation and government policy at the federal, state and local levels could directly

¹ Pennsylvania WNA went into effect August 1, 2023.

Reliability of Natural Gas



94%¹ of all energy used in Western New York on the coldest winter day is natural gas

44% colder²
Western New York weather vs. Downstate

99.99%³
National Fuel utility service reliability

¹ C.J. Brown analysis using an average outdoor air temperature of 2.2°F, a 90% AFUE furnace, and natural gas for water heating and clothes drying.

² Value is calculated using the average of the actual heating degree days for calendar years 2012-2022 as reported by the National Oceanic and Atmospheric Administration for the Buffalo Niagara Airport and LaGuardia Airport locations.

³ Value is for twelve months ended December 31, 2022 and represents the percentage of New York Distribution customers with no unscheduled outages due to the Company's error.

or indirectly impact our rates. These may include environmental regulations that restrict natural gas production or the development and operation of transmission pipelines; the implementation of additional taxes, including a carbon tax, on natural gas services; and income tax policy.

Currently, the most significant regulatory impact the Downstream Segment faces is the enactment of the Climate Leadership and Community Protection Act of 2019 (“Climate Act”). The Climate Act established economy-wide goals to reduce GHG emissions in New York by 40% in 2030 and 85% by 2050, relative to a 1990 baseline, as well as zero emissions power generation by 2040. To support the Climate Act, the NY PSC established a gas system planning process for natural gas local distribution companies. The order includes a requirement for each LDC to file a long-term plan (LTP) on a continuing cycle every three years, along with annual updates to be filed on May 31st in the interim years. On July 17, 2023, Distribution Corporation was the first utility in NY to issue their LTP, which demonstrates the Company’s commitment to pursuing responsible GHG emissions reductions, enhancing the resilience of the energy system and delivering safe, reliable and affordable energy service to customers. As part of the plan development, Distribution Corporation performed detailed analyses of potential decarbonization actions, including full building electrification.¹

The previously discussed external factors impacting affordability could significantly increase our rates and potentially place stress on our customers’ ability to pay their monthly natural gas bills, which may result in higher costs for the Company in the form of uncollectible accounts. To mitigate these risks and ease the burden on our customers, our Downstream Segment has implemented several customer service initiatives, such as budget billing and extending deferred payment arrangements, designed to stabilize customer bills and encourage customer payments.

¹ Implementation of these decarbonization actions will require appropriate regulatory approvals.

Analysis of Potential Decarbonization Actions Under the Distribution LTP

Energy Efficiency: Model includes two new energy efficiency programs targeted to the residential class (weatherization and home energy reports) and one new energy efficiency program for the small commercial class (weatherization).

Electrification: Model incorporates a robust approach to electrification of existing space heating loads for several separate market segments, including residential, small commercial, universities and colleges, and large multi-family customers, as well as electrification of other gas appliances. Residential electrification incorporates converting certain customers to hybrid heating systems that provide a reliable, effective, and more affordable source of heating.

Industrial Customer Programs: Model considers two forms of decarbonization actions related to industrial customers: electrification of space heating loads and performing energy efficiency on process loads. There are competitive challenges related to decarbonization actions for industrial customers.

Thermal Energy Networks (“TENs”): Model considers TENs (including networked geothermal) pilot programs.

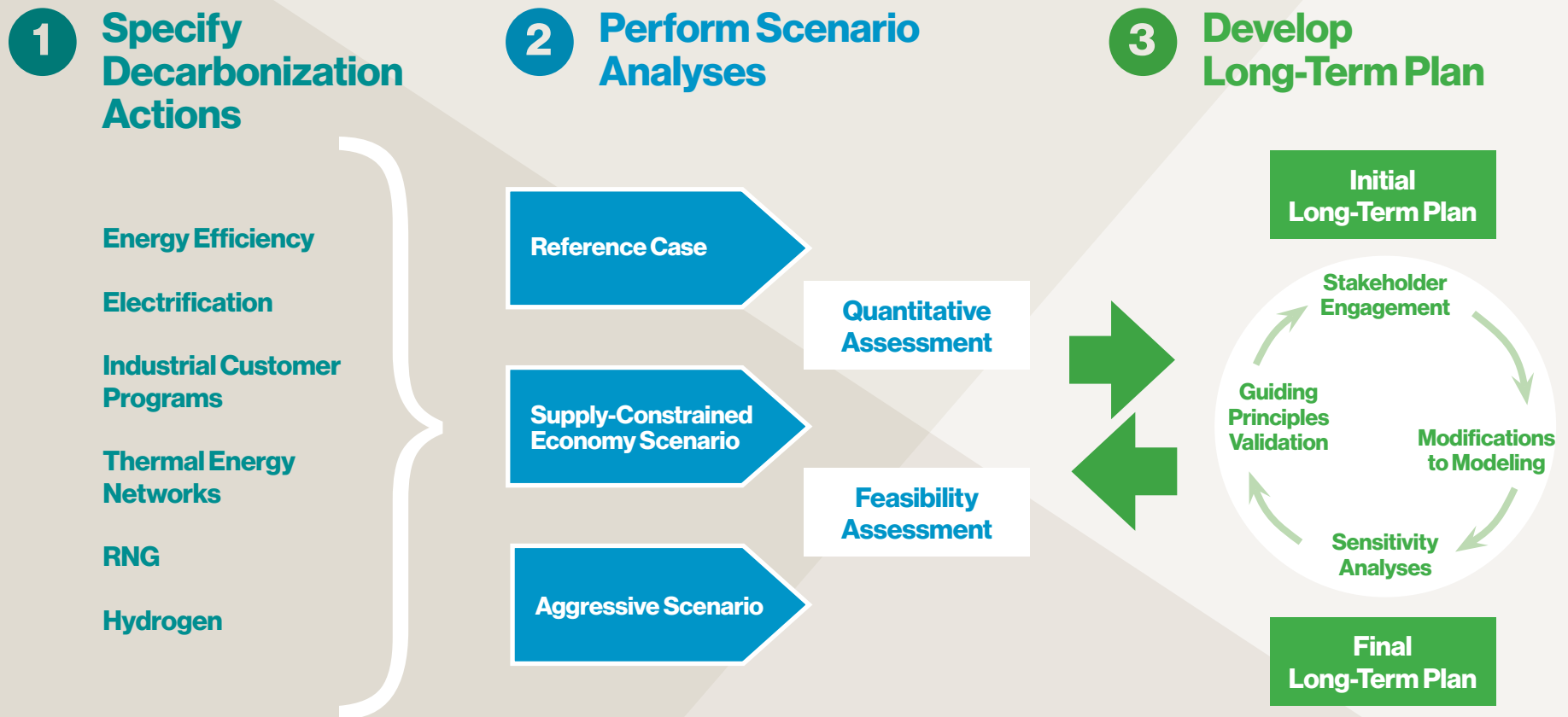
RNG: RNG is biogas that has been converted into pipeline-quality gas and is considered a “drop in” replacement for natural gas. Using RNG as a substitute for natural gas captures the GHG emissions from the biogas feed source that would otherwise have been emitted to the atmosphere, resulting in significant GHG emissions reductions and environmental benefits. RNG can be easily blended into the gas supply and does not require building-by-building installations of equipment.

Hydrogen: Blending green hydrogen into natural gas for redelivery to customers reduces GHG emissions associated with combustion. Hydrogen can be blended into the gas supply and does not require building-by-building installations of equipment at low blending levels.

Development of National Fuel's LTP



Distribution Corporation developed the Long-Term Plan by using a reference case and analyzing two scenarios to better understand relative efficiencies (cost per GHG emission reduction) and identify a combination of decarbonization actions towards New York's Climate Act goals that produces the best overall plan to optimize affordability, reliability and respective emissions reductions. Both scenarios included specific levels of each of the six decarbonization actions on the prior page but were not limited by cost.

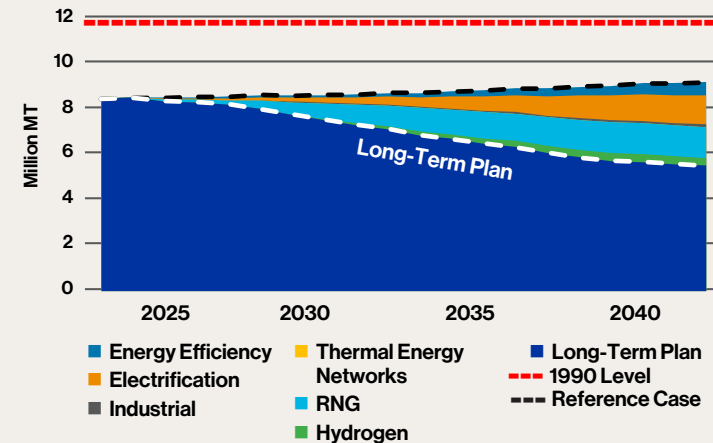


Our LTP is projected to reduce emissions by 40% by the end of a 20-year horizon (2042) compared to the Reference Case (business-as-usual) levels, and by 53% from 1990 levels, and will make substantial contributions towards New York's decarbonization goals. The emissions reductions start modestly and increase over time as constraints on deploying technology are resolved. Emissions reductions are expected to continue after 2042.

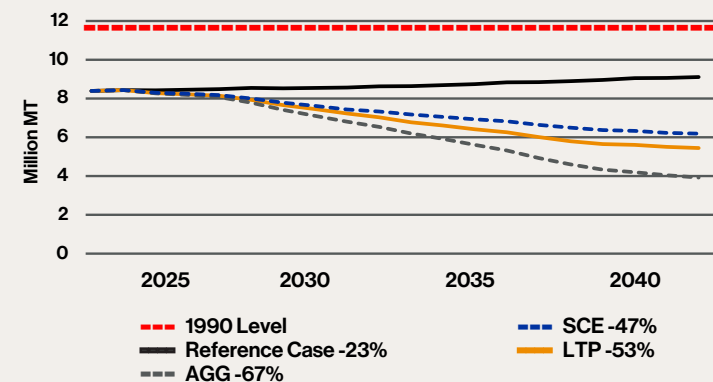
Distribution Corporation developed the LTP by using a reference case and by analyzing two scenarios to better understand relative efficiencies (cost per GHG emission and reduction) and identify a combination of decarbonization actions towards New York's Climate Act goals while still producing the best overall plan to optimize affordability, reliability and respective emissions reductions. Both scenarios included specific levels of each of the six decarbonization actions on the prior page, but were not limited by cost.

- **Supply-Constrained Scenario (SCE):** Reflects labor and resource constraints that are experienced under normal economic conditions and limit energy equipment manufacturing, building construction and utility infrastructure development.
- **Aggressive Scenario (AGG):** Reflects an optimistic view with respect to customer interest in electrification options and the ability of national, regional and local economies to deliver labor, technologies, customer equipment and infrastructure to enable decarbonization of New York's economy.

Long-Term Plan: Million MT CO₂e^{1,2}



Million MT CO₂e

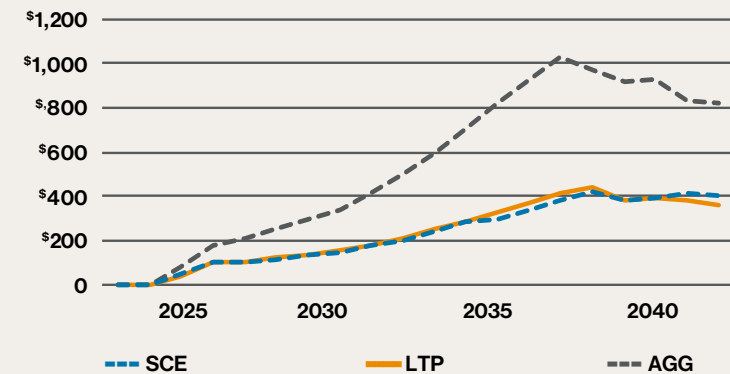


1 Industrial (0.1) and Thermal (0.01) are not visible on the graph but remain listed as key elements to our overall LTP.

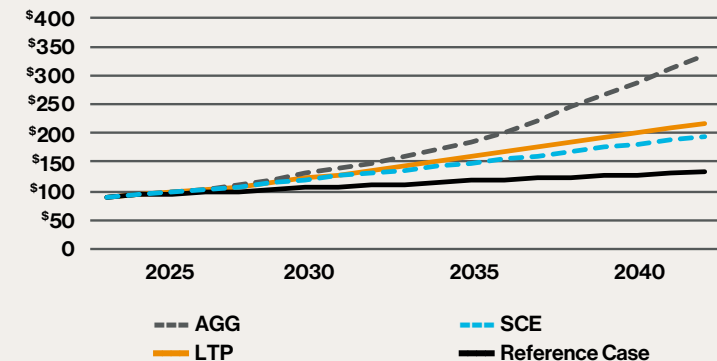
2 Includes scope 1, 2, and 3 emissions.

Our LTP illustrates that Distribution Corporation can responsibly drive substantial emissions reductions using a mix of decarbonization actions that don't reduce reliability. However, each scenario demonstrates that there will be significant costs, both in new infrastructure and in monthly customer energy bills, to transition to a lower carbon energy delivery system. As shown in the graph to the right, costs range from approximately \$400 million per year over the last 5 years of the LTP and Supply-Constrained scenarios to between \$800 million and \$1 billion per year under the Aggressive Scenario. In addition, the Aggressive Scenario, which assumes full electrification for existing residential natural gas customers, does not account for the significant expected costs to deploy such an electrification policy at scale. Moreover, the Aggressive Scenario does not account for the substantial customer safety and reliability risks created due to increased potential for electric outages as the electric grid becomes more reliant on intermittent sources of energy generation, and access to heating fuels within our cold weather service territory becoming limited in this scenario. These analyses have helped shape Distribution Corporation's key long-term strategies that focus on enhancing energy efficiency measures, promoting hybrid heating systems and leveraging our existing infrastructure to deliver low carbon fuels. The full LTP can be found on the Company's website at: www.nationalfuel.com/utility/gas-planning-process.

Annual Decarbonization Policy Costs, \$ Million



Residential Nonparticipant Typical Monthly Gas Bill





National Fuel's LTP Delivers Benefits to its Customers and Communities

LTP Emissions Reductions are More Affordable than other Scenarios

- 1.** The LTP prioritizes safety and reliability by diversifying energy sources and continuing the Company's leak-prone-pipe (LPP) replacement program;
- 2.** The LTP preserves customer choice and provides a more affordable option while relying on the gas system to ensure effective heating during the coldest days and nights of the year;
- 3.** The LTP addresses affordability and reduces energy cost burdens for low-to-moderate income (LMI) customers;
- 4.** The LTP achieves meaningful reductions in GHG emissions by 2042, prioritizing emissions reductions for LMI customers;
- 5.** The LTP is not merely aspirational; it is technically feasible and contemplates technology advances during the 20-year period;
- 6.** The LTP is feasible from an infrastructure standpoint. It reflects resource and timing constraints related to the conversion of heating and cooling to electricity and the buildout of electric infrastructure to reliably serve incremental demand;
- 7.** The LTP contributes to a resilient energy system that involves coordination between the natural gas and electricity industries; and
- 8.** The LTP is flexible and can adapt as energy technology and policy evolve in the future.



Affordability

The Utility has also been attentive to aiding its low-income customers. Some examples include:

- Low-Income Home Energy Assistance Program (LIHEAP)** — Distribution Corporation has been an industry leader in providing outreach and support to our low-income customers to help them secure federal LIHEAP funding to pay their winter heating bills. Since the winter of 2009-2010, our Downstream Segment customers have received more than \$600 million in assistance. In response to the pandemic, we have continued to work closely with state agencies to connect customers that have been negatively impacted by COVID-19 with additional LIHEAP and other available utility payment assistance.
- Extraordinary COVID Relief** — Throughout the pandemic, Distribution Corporation actively assisted our low-income customers in securing available additional assistance. Through April 2023, Distribution Corporation customers have received over \$22.4 million in assistance through the Home Energy Assistance Program - Regular Arrears Supplement and over \$5.4 million of assistance through the Emergency Rental Assistance Program.
- Low-Income Customer Affordability Programs** — Distribution Corporation also provides robust programs for its low-income customers, offering monthly bill discounts, reduced rates and debt forgiveness opportunities.
- Neighbor for Neighbor Heat Fund** — A program that offers grants to qualifying households within the Company's service territory and is funded by contributions from National Fuel Gas Company, its customers, employees and other private entities.

Average Retail Gas Rates

The following table shows the average retail gas rates per thousand cubic feet (Mcf) for residential, commercial and industrial customers, as well as transportation only services for those respective customer groups:

Utility Average Retail Gas Rates per Mcf ^{1,2}	2020	2021	2022
Bundled Retail Sales³			
Residential	\$7.91	\$8.97	\$11.31
Commercial	\$7.07	\$8.11	\$10.45
Industrial	\$6.28	\$7.45	\$9.50
Total Retail	\$7.79	\$8.85	\$11.18
Transportation Sales			
Residential	\$3.99	\$4.10	\$3.88
Commercial	\$2.18	\$2.25	\$2.25
Industrial	\$0.76	\$0.77	\$0.84
Total Transportation	\$1.69	\$1.63	\$1.66

1 Bundled retail revenues and consumption by customer type for total Distribution Corporation are reported quarterly and on a fiscal year basis in the Company's Securities and Exchange Commission (SEC) filings Forms 10-Q/10-K. Revenues and consumption are also reported on a calendar year basis for total Distribution and the New York Division in the annual report to the NYPSC. This Report's Downstream Segment section utilizes Mcf as the volumetric unit of measure to remain consistent with Distribution Corporation's public disclosures to state utility commissions and SEC filings.

2 Average retail rate for each bundled customer class is calculated on a calendar year basis by dividing the revenues by the consumption attributed to each customer class as reported in the respective utility commission reports.

3 Recent trends in bundled rates are largely driven by fluctuations in gas prices and the related impact on gas supply revenues. Distribution Corporation's New York and Pennsylvania service territories have been operating under the same base rates for the last five and fifteen calendar years, respectively.

The following table shows the typical monthly gas bill for residential customers for 50 Mcf and 100 Mcf of gas delivered per year¹

Typical Monthly Gas Bill for Residential Customers	2020	2021	2022
New York – 50 Mcf – Bundled Residential			
Delivery	\$30.32	\$30.24	\$30.25
Supply	\$14.98	\$18.75	\$31.59
Surcharges/(Refunds) ²	\$0.02	\$0.85	\$1.18
Avg. Monthly Bill	\$45.32	\$49.84	\$63.02
New York – 100 Mcf – Bundled Residential			
Delivery	\$37.27	\$37.14	\$37.22
Supply	\$29.96	\$37.50	\$63.18
Surcharges/(Refunds) ²	\$0.04	\$1.71	\$2.36
Avg. Monthly Bill	\$67.27	\$76.35	\$102.77
Pennsylvania – 50 Mcf – Bundled Residential			
Delivery	\$23.88	\$23.32	\$21.73
Supply	\$16.89	\$20.76	\$29.06
Surcharges/(Refunds) ²	\$(0.45)	\$(1.03)	\$1.11
Avg. Monthly Bill	\$40.32	\$43.06	\$51.90
Pennsylvania – 100 Mcf – Bundled Residential			
Delivery	\$33.26	\$32.45	\$29.77
Supply	\$33.84	\$41.57	\$58.16
Surcharges/(Refunds) ²	\$(0.90)	\$(2.05)	\$2.22
Avg. Monthly Bill	\$66.20	\$71.97	\$90.16

1 The calculation methodology used is consistent with reporting to state commissions and disclosures on the Company's corporate website, and better captures the impact of seasonal rates and delivery patterns and the recovery and/or refund of regulatory deferrals.
 2 In New York, surcharge/refund items may include the recovery of the system modernization tracker and costs to administer the CIP, and the benefits of tax reform to ratepayers. In Pennsylvania, these items may include the impact of various rate riders for low-income customer programs and the state tax adjustment.

Residential Customer Gas Disconnections

As our Downstream Segment meets its obligation to provide safe, reliable natural gas services at affordable rates, Distribution Corporation has the right to charge, collect and receive just compensation for its services. State regulations allow Distribution Corporation to disconnect service to a customer due to non-payment, subject to certain restrictions and requirements. As such, our Downstream Segment and state commissions have implemented a number of policies and programs designed to comply with state laws and regulations on collections and disconnections, improve affordability for vulnerable customers and ultimately limit the number and reduce the duration of residential customer disconnections resulting from non-payment, which are described below.

Low Income Customer Affordability Programs

- New York State Low Income Program (NYSLIP) provides bill discounts designed to ensure that a low-income customer's energy burden does not exceed a targeted level;
- Pennsylvania Low Income Residential Assistance Program (LIRA) provides customers with bill discounts, arrearage forgiveness and energy conservation education;
- Distribution Corporation collaborates with local Health and Human Services agencies to connect low-income customers with available federal LIHEAP funding and other financial assistances through social services; and
- Distribution Corporation sponsors the National Fuel Neighbor for Neighbor program, which provides energy grants to qualifying households experiencing an energy emergency.

Policies/Programs Aimed at Limiting Number of Disconnections

- Suspension of disconnections during extreme winter weather events, prolonged periods of extreme cold and the holidays;
- Suspension of disconnections to low-income customers during winter months;
- Suspension of disconnections to known Elderly, Blind or Disabled coded accounts in New York during the time between September 1st and April 15th; and
- Recent laws/emergency orders banning and regulatory guidance regarding the shutoff of residential utility services during the COVID-19 crisis.

Policies/Programs Aimed at Reducing Duration of Disconnections

- Providing flexible, deferred payment arrangements coupled with LIHEAP assistance to accelerate turn-ons;
- Restoration of service for medical emergencies and suspected serious impairments; and
- Company Gatekeeper Program that identifies and assists vulnerable customers.

The following table shows the number of residential customer gas disconnections for nonpayment, as well as the percentage of those disconnections that were reconnected within 30 days. Distribution Corporation tracks and reports these disconnections due to non-payment to the NYPSC and Pennsylvania Public Utility Commission (PAPUC). As a result of the COVID-19 pandemic, for New York customers, Distribution Corporation suspended disconnections for non-payment during calendar years 2020 and 2021 and as a result, the metrics reported in the table below for the percentage of customers reconnected within 30-days is not meaningful. Disconnections for non-payment were reinstated for 2022 except for low-income customers. For Pennsylvania customers, Distribution Corporation suspended disconnections for 2020, but reinstated for 2021, thus there are significant fluctuations for the periods reported. As discussed above, Distribution Corporation continues to have strong customer service programs in place for customers struggling to pay their bills and facing potential disconnection, including LIHEAP assistance, low-income bill discount programs and deferred payment arrangement opportunities.

Utility Disconnections/Reconnections	2020	2021	2022
New York Division			
Disconnections for Non-Payment ¹	0	0 ²	14,959
Reconnections within 30-days	0	0	8,680
% Reconnected within 30-days ³	—	—	58.03%
Pennsylvania Division			
Disconnections for Non-Payment ¹	0	7,091	6,861
Reconnections within 30-days	0	1,356	3,424
% Reconnected within 30-days³	—	19.1%	49.91%

- 1 Trends in customer disconnections are driven by a number of factors, which can vary from year to year. In 2020, disconnections were suspended as a result of the COVID-19 pandemic, thus the total disconnections for non-payment are zero. In Pennsylvania, disconnections commenced during summer 2021, however, there remained a moratorium in New York, thus an increase occurred in Pennsylvania only for 2021.
- 2 Excluded from the CY 2021 number are nine disconnections that were completed for safety purposes due to mandated leak and corrosion safety inspection requirements. These disconnections were performed in accordance with New York Public Service Commission Orders in Case 15-G-0244.
- 3 Distribution Corporation does not currently track and report disconnections that are reconnected within 30 days. The Company was able to generate a query from its internal billing system of all reconnections that occurred during the calendar year that generated both the disconnection and reconnection date for each record. The Company then determined the number of records where the reconnection had occurred within 30 days and divided that number by the total disconnections determined above.

End-Use Efficiency

Our Downstream Segment has been focused on promoting energy efficiency and conservation. We partner with our regulators, industry groups and local businesses to develop and administer outreach and incentive programs designed to reduce our customers' energy usage through improved appliance efficiency and consumption habits.

In New York, Distribution Corporation's energy efficiency activities have centered on our Conservation Incentive Program ("CIP"). The CIP budget is funded by ratepayers through a monthly bill surcharge. Since inception in 2007, the Company's CIP has resulted in a cumulative total reduction of approximately 1.7 million metric tons of carbon dioxide emissions, or the equivalent of 400,555 gasoline-powered passenger vehicles driven for one year (per EPA).

The Company's CIP is comprised of the following programs:

- **Residential Rebate Program:** An equipment replacement program that offers rebate incentives to replace aging and inefficient space and water heating equipment with high efficiency appliances in single-family residential dwellings.
- **Non-Residential Rebate Program (NRCIP):** An equipment replacement program that offers businesses rebate incentives to replace aging and inefficient space, water and process heating equipment with high efficiency appliances. Through the program, the Company is also able to offer customized incentives that provide natural gas savings.

- **The Statewide Low-Moderate-Income Portfolio (LMI) formerly known as Low Income Usage Reduction Program (LIURP):** A weatherization program that is specifically designed to help low-income residential customers reduce their energy consumption. The program, which is administered through New York State Energy and Research Development's (NYSERDA) EmPower New York program, offers qualifying customers heating system checks, energy audits and weatherization measures.
- **Outreach and Education:** Our Downstream Segment has developed an extensive outreach program, which includes marketing across a variety of media and platforms to educate customers about their energy usage habits and promote energy efficiency and the CIP programs.

Customer Gas Savings from Efficiency Measures

The following table shows the total amount of gas savings delivered to customers from the CIP in our Downstream Segment's New York Division.

NY CIP Gross Annual Savings (Mcf) ¹	2020	2021 ²	2022
Residential Rebate Program	181,699	177,873	153,713
NRCIP	42,195	85,727	42,943
LIURP	31,411	21,968	47,420

¹ Gas savings are calculated on a gross basis consistent with the New York energy efficiency proceeding (NY 07-M-0458).

² 2021 data has been updated to reflect completed projects.

Our Downstream Segment has seen steady growth in its residential rebate programs while non-residential programs appear to fluctuate year to year based on activity. The recent Energy Efficiency proceeding in New York provided utilities with additional ratepayer funding for energy efficiency programs over and above current CIP budgets. Distribution Corporation spent \$39 million on energy efficiency programs and initiatives between 2020-2022 and expects to spend nearly \$46 million on energy efficiency programs and initiatives between 2023 and 2025. Notably, for program years 2022-2025, Distribution Corporation is offering a rebate for a hybrid heating system, which is expected to be an effective measure for reducing GHG emissions without compromising resiliency.

Promoting Energy Efficiency Programs

In line with the Climate Act's GHG reduction requirements, our Downstream Segment continues its focus on and is directing resources to efficiency programs and activities.

SEALED Partnership:

SEALED specializes in building shell and equipment upgrades. The company offers prospective customers financing for these upgrades, and in some cases, no upfront costs or changes to a monthly budget. SEALED pays for the installation improvements to a customer's home and gets reimbursed with the savings from the customer's energy bills. Additionally, National Fuel had the highest initial response rate and qualified prospects from any other New York utility they have partnered with.

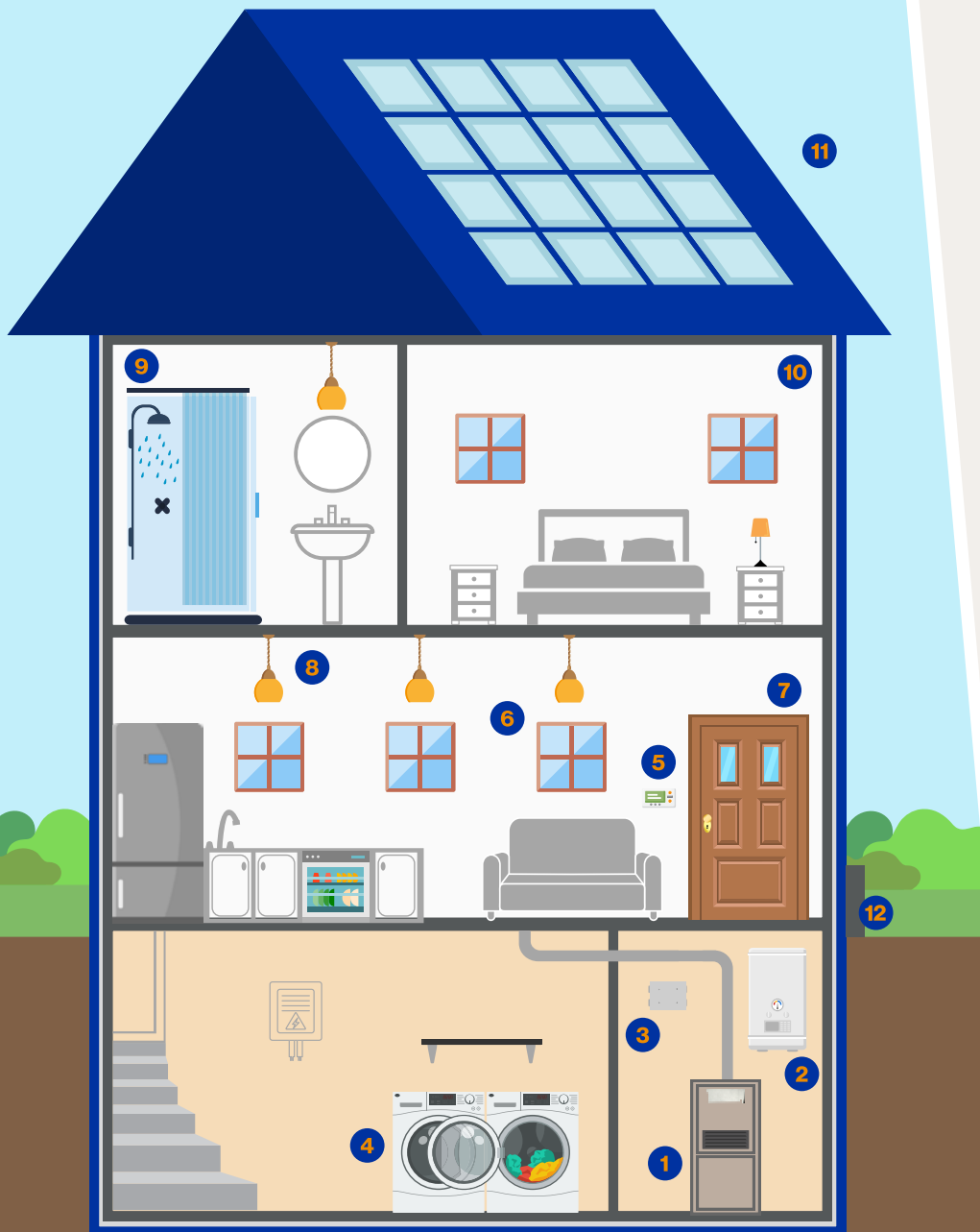
Zero Net Energy (ZNE) Home Demonstration Projects:

Demonstrates how natural gas can help builders reach Zero Net Energy at a lower cost than a typical all-electric design, while also yielding lower energy bills. On an annual basis, ZNE homes must minimally produce the same amount of energy as they consume through:

- Smart design, energy modeling and advanced building techniques;
- Highly insulated building, windows and doors;
- Energy efficient fresh air supply;
- Energy efficient heating and cooling systems; and
- Renewable energy use.

Distribution Corporation is currently partnering with Niagara County Habitat for Humanity on two ZNE homes (one restoration and one new build). The expected results estimate that the homes are between 89%-100% ZNE and anticipate CO₂ emissions being 60% less than the average home. The restored home was completed in 2019. The new build design is modeled to achieve a HERS index of 0, which is considered a Zero Net Energy Home. Construction of the new build is expected to be completed by late 2023.

Features of a Net Zero Home



- 1. High Efficiency Furnace**
Creates more heat with less energy
- 2. Tankless Water Heater**
Heats water efficiently
- 3. Heat Recovery Ventilation**
Distributes fresh air throughout the home
- 4. Tier Three Appliances**
Represents highly efficient household appliances
- 5. Energy Management**
Optimizes energy use throughout home
- 6. High Performance Doors and Windows**
Reduces heat loss and increases daylight into home
- 7. High Quality Air Sealing**
Reduces largest source of heat loss
- 8. LED Lighting**
Provides low energy, high quality lighting
- 9. Low-Flow Water Fixtures**
Reduces amount of hot water being utilized
- 10. Double Insulation**
Reduces heating and cooling demand
- 11. Solar/Photovoltaic Panels**
Converts and stores energy to meet demand
- 12. Gas Meter**
Measures natural gas quantity and rate of flow

Hybrid Heating System Demonstration Projects:

A hybrid heating system consists of a high efficiency natural gas furnace and an electric air source heat pump (ASHP). These integrated natural gas and electric systems work together to provide more reliable and resilient heating and cooling for homeowners while delivering lower greenhouse gas emissions. With respect to a residence that utilizes a hybrid heating system, annual home energy costs are expected to be more affordable using electricity and gas for space heating. This would avoid the significant costs associated with full electrification.

- Electric air-source heat pumps become less efficient as outdoor temperatures decrease, increasing demands on the electric grid, consumer costs and emissions. This emissions reduction pathway uses a hybrid system consisting of high efficiency gas furnaces coupled with a high efficiency electric ASHP.
- The hybrid system is designed to switch heating from an electric heat pump to a gas furnace at temperatures below 30 degrees. As a result, gas consumption and associated emissions can be significantly reduced. A \$1,350 rebate is added to the energy efficiency program for a combination 15 SEER ASHP/95% furnace.
- A total of 33 systems have been installed (21 in NY & 12 in PA). According to the preliminary data, the installations exhibited the following results:
 - Annual natural gas usage has decreased by 35%
 - Annual electric usage has increased by 26%
 - Annual total energy cost has decreased by 5%
 - Annual GHG emissions have decreased by 22%

Percentage of Gas Utility Revenues from Decoupled Rate Structures

Our Downstream Segment has a Revenue Decoupling Mechanism (RDM) in place for its New York Division. It is designed, in part, to limit any financial benefit that Distribution Corporation could receive by increased customer usage while ensuring that the Company is able to earn its regulatory approved revenue requirement. Distribution Corporation's RDM is based on usage per account targets for residential and certain non-residential customer service classifications. To the extent that our customers' actual usage decreases as a result of energy efficiency measures and programs, the Downstream Segment's revenues would be adjusted under the RDM to match the usage per account target.

Based on the SASB definitions of "decoupled revenues," the Company determined that the New York Division has three sources of revenues that are earned on a volumetric basis, but have adjustment mechanisms that reconcile the actual revenues earned and collected during any given period back to a target that was based on the revenue requirement set in the last rate case. These mechanisms are in place to limit any financial incentives to increase customer usage. There are no revenues or rate mechanisms in place at this time in Distribution Corporation's Pennsylvania Division that would meet the scope of this standard.¹

Decoupled Revenues as % of Total Revenues	2020	2021	2022
Total Utility Revenues (\$'000s)	\$644,474	\$715,009	\$973,143
Decoupled Utility Revenues (\$'000s)	\$166,347	\$165,367 ²	\$166,910
Decoupled Revenues as a % of Total	25.8%	23.1%	17.2%

¹ Pennsylvania's WNA went into effect August 1, 2023.

² Decoupled utility revenues for 2021 were adjusted as a result of actual billed margin, which was unavailable at the time the 2021 report was filed.

The Company did not include the revenues earned from fixed monthly minimum bill charges. The three revenue sources and their corresponding adjustment mechanisms are as follows:

- **Residential and Non-Residential Block Margin Revenues:** Distribution Corporation's RDM adjusts delivery revenues based on normalized usage per account targets set for residential and certain non-residential customers in the Company's 2016 rate proceeding. Additionally, Distribution Corporation's WNA adjusts delivery revenues to limit the impact of weather that is colder or warmer than normal.
- **Industrial Margin Revenues:** Distribution Corporation's 90/10 Symmetrical Sharing mechanism in its 2016 rate proceeding set a target for industrial revenues of approximately \$27 million per year. To the extent that actual revenues are below the target, Distribution Corporation can surcharge ratepayers to recover 90% of the shortfall. If actual revenues are above the target, the Company is required to refund 90% of the overage.
- **Merchant Function Charge Revenues (MFC):** Distribution Corporation's last rate proceeding set a target of approximately \$16 million per year to recover the Record and Collection - Procurement of Commodity component of the MFC each year. The MFC rate is charged to ratepayers volumetrically. The Company can surcharge/refund the difference between the target and actual collections as a result of lower/higher usage.

The percentage of decoupled revenues relative to total utility revenues has remained roughly between 15-25% of total revenues. The fluctuations in the percentage are primarily due to changes in purchased gas costs, which are market driven and passed on to retail customers at cost. The percentage range of decoupled revenues is unlikely to change significantly over the near-term.

Integrity of Gas Delivery Infrastructure

At National Fuel, our highest priority is the safety of our customers, employees and the communities we serve. Distribution Corporation operates approximately 36,276 kilometers of pipelines, including service lines, which serve approximately 754,000 customers in Western New York and northwestern Pennsylvania. We are proud of our safety record and have worked hard to establish a culture that embraces continuous improvement in all aspects of safety, including the following programs, which will be discussed in more detail in this report:

- Aggressive System Modernization Program;
- Leak Management Program;
- Comprehensive Integrity Management Program;
- Customer Outreach and Education on Safety;
- Rapid Emergency Response;
- Accelerated Leak Surveys;
- Damage Prevention Programs;
- Pipeline Safety Management System;
- Employee and Contractor Training and Qualification; and
- Safety Culture Programs.

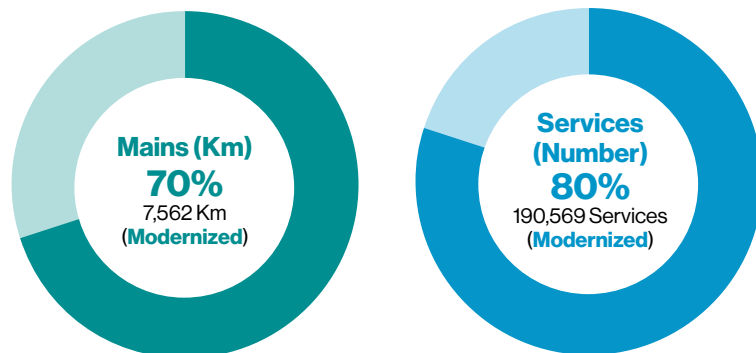
System Modernization – Percentage of System that is Cast and/or Wrought Iron or Unprotected Steel¹

Distribution Corporation began accelerating the replacement of unprotected bare steel, cast iron and wrought iron distribution mains on its system in the mid-1990s with the implementation of a system modernization program. The Company designed this program to identify and prioritize pipeline replacement. This includes evaluating system risk to ensure the safety and reliability of our system.

Since 1990, Distribution Corporation has made significant and consistent progress in system modernization, with special emphasis placed on replacing cast iron mains which have been shown to leak at higher rates than other pipe material types. The Company does not have any known cast iron mains in its Pennsylvania service area and replaced its remaining New York cast iron in calendar year 2023.

Downstream System Modernization Progress

Bare Steel, Cast Iron and Wrought Iron Pipe Reduction since 1990



¹ U.S. Department of Transportation (DOT), Pipeline and Hazardous Materials Safety Administration, 2022 Gas Distribution Annual Report for National Fuel Gas Distribution Corporation (Operator IDs 13061 and 13062).



In June 2023, the final piece of cast iron pipe was removed from the Company's distribution system.

With respect to system modernization, Distribution Corporation is focused on maximizing system safety and reliability. We optimize capital expenditures by developing larger scope projects with better economies of scale rather than multiple smaller projects with higher unit costs. Distribution Corporation also maximizes replacement with medium-pressure pipe installation to reduce pipe diameter size, which allows insertion of new medium pressure plastic mains into the larger low-pressure bare steel, cast iron and wrought iron mains being retired. This reduces excavation and restoration costs, and future excavation damage to plastic mains. An additional benefit to expanding the medium pressure system is the relocation of gas meters to the outside of homes and businesses for improved safety and easier operation and maintenance. Our continued steady pace of system modernization provides construction, operations and maintenance efficiencies, and enhances system reliability and safety.

Over the past five years, Distribution Corporation has invested over \$358 million in the safety of our utility pipeline network, including system modernization. The inventory of unprotected bare steel, cast iron and wrought iron distribution pipelines is currently 11.4% of the total system as shown in the following table.

Distribution Unprotected Bare Steel, Cast Iron and Wrought Iron Pipeline Inventory

Distribution Pipelines As of December 31, 2022	Unprotected Bare Steel	Cast Iron	Wrought Iron	Total System
Distribution Mains (Kilometers)	2,721	10 ¹	449	23,572
% by Material	11.5%	0.04%	1.9%	13.5%
Services (Number)	47,756	–	–	657,269
Services (Kilometers)	909	–	–	12,399
% by Material	7.3%	–	–	7.3%
Total Distribution Pipelines (Kilometers)	3,630	10	449	35,971
% by Material	10.1%	0.03%	1.2%	11.4%

The System Modernization Program has resulted in significant annual GHG emission reductions, as shown in the [Greenhouse Gas Emissions](#) section.

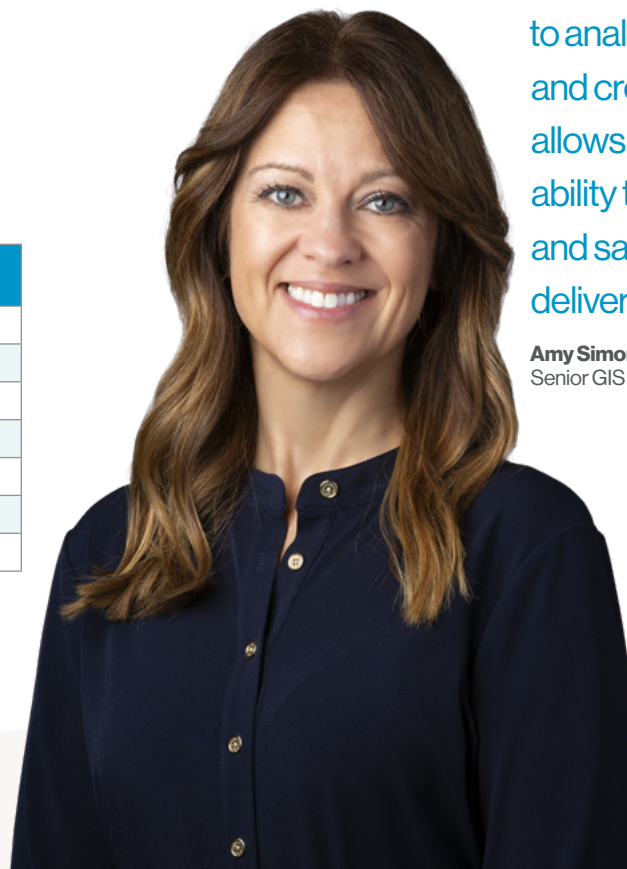
¹ The final piece of cast iron pipe was removed from the Company's distribution system in 2023.

Managing the Integrity of Our Natural Gas Delivery and Transmission Infrastructure

National Fuel has been building and operating natural gas pipelines for more than 120 years and continues to embrace a culture of “safety first.” Our pipeline maintenance efforts are designed to meet or exceed safety requirements and we continue to make significant investments to improve the safe operation of our systems. Our Downstream and Midstream segments utilize numerous programs and systems to ensure pipeline integrity and the safety of our employees, business partners and the communities we serve.

“Utilizing new GIS technology to analyze pipeline facilities and create efficiencies allows the Company the ability to ensure the integrity and safety of our natural gas delivery system.”

Amy Simonsen
Senior GIS Manager, Engineering Services



Customer Safety

Every day through every season, National Fuel places the highest priority on safety. From our local call center representatives to construction and customer service personnel in the field, our employees are dedicated to delivering natural gas to our customers safely and efficiently. National Fuel has a long-standing culture of safety that encourages continuous improvement of our safety performance, with demonstrated success in the following core areas of customer safety.

Public Safety/Awareness Campaign – Smell Gas Leave Fast

To ensure our customers know what to do if they smell gas, we have an ambitious public safety awareness campaign with a simple message: “Smell Gas? Leave Fast!” This campaign is one element of our Public Awareness Program that engages stakeholders through direct mailings, bill inserts, billboards, radio, print and social media advertisements. Stakeholder engagement is also an essential element of our Pipeline Safety Management System (PSMS). Our field personnel play a critical role in reinforcing this message while interacting face-to-face with our customers. Beginning in 2022, our field personnel leave customers with a “Smell Gas? Leave Fast!” magnet for their home and reiterate that if they smell gas they should immediately leave the premise and proceed to a safe distance away (about the length of a football field) and call National Fuel at 1-800-444-3130 for a free leak investigation.



Smell Gas?

Leave fast and call 1-800-444-3130
for a free leak investigation



Residential Methane Detector Program

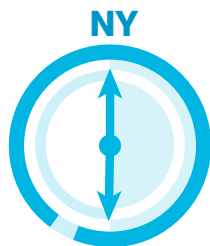
Distribution Corporation began a Residential Methane Detector program in April 2022 in its New York service territory. This program is intended to provide customers with methane detectors for residential use, free of cost. These devices monitor levels of methane in the air and alert customers through an alarm. Initial distribution of methane detectors focused on elderly, blind and disabled customers.

Emergency Response

Distribution Corporation places a high priority on having a rapid response to emergencies and a thorough investigation once onsite. As a result of our commitment to emergency response, we are among industry leaders in this area as confirmed by annual industry benchmarking and statewide regulatory performance measure reporting.

In 2022, Distribution Corporation demonstrated the resiliency of its underground delivery system as two major winter storms dropped nearly 90 inches of snow on the Western New York region. Field operations employees worked around the clock to maintain safety and service for customers during these events. Employees safely responded to customer emergencies while battling the harsh, blizzard conditions throughout the Buffalo region. These actions reflect the dedication of National Fuel and its employees, and the ability to operate a safe, reliable system that provides uninterrupted energy delivery even in the most severe winter conditions. Despite these two storms, in 2022 Distribution Corporation responded to over 92% of emergency calls within 30 minutes in its New York service territory. In Pennsylvania, where our Downstream Segment's service territory is more rural than in New York, Distribution Corporation responded to emergency calls within 45 minutes over 98% of the time.

2022 Emergency Response Time



92% of emergency calls responded to within 30 minutes



98% of emergency calls responded to within 45 minutes

In 2022, Distribution Corporation demonstrated the resiliency of its underground delivery system as two major winter storms dropped nearly 90 inches of snow on the Western New York region.



Emergency Response Coordinators

Distribution Corporation offers multiple free training alternatives for emergency response personnel that promote safe identification and response to natural gas emergencies. These trainings include online first responder natural gas safety trainings, as well as free in-person training for first responders and emergency management agencies in our service territory. We also sponsor and participate in regional meetings covering pipeline safety with local excavators, emergency responders and public officials. Our [Pipeline Safety](#) webpage serves as a “one-stop shop” for pipeline safety resources for affected stakeholders and the general public.

In 2022, National Fuel's Emergency Response Coordinators hosted 30 external training events throughout New York and Pennsylvania operating territories. The training opportunities focus on safety, properties of natural gas, field infrastructure and emergency response. After this initial training, firefighters are invited to attend a live fire school where different types of natural gas fires can be extinguished. 550 firefighters from New York and Pennsylvania attended these outreach classes.



Leak Management

An effective leak management program improves safety and reduces GHG emissions.

The federal Protecting our Infrastructure of Pipelines and Enhancing Safety Act of 2020 (PIPES Act) requires regulations for leak detection and repair programs to identify, locate and categorize all leaks that are hazardous to human safety or the environment. Further, the PIPES Act requires pipeline operators to update their inspection and maintenance plans with respect to public safety, eliminating hazardous leaks, minimizing releases of natural gas and the replacing or remediating of pipelines that are known to leak based on the material, design or past operating and maintenance history of the pipeline.

Distribution Corporation has a comprehensive leak management program consistent with the goals of the PIPES Act including:

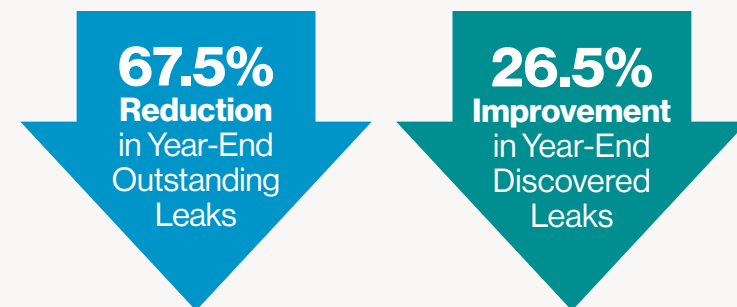
- Prompt identification of leaks, conditions that may lead to leaks or other unintentional releases of natural gas from pipeline facilities;
- Rapid response to emergencies and a thorough investigation once onsite;
- Accelerated leak surveys exceeding regulatory requirements that target facilities with a higher potential to leak or that have potentially higher consequences should a leak occur;
- Comprehensive leak classification and repair procedures for above ground and below ground leaks;
- Plastic system integrity program that targets leaking plastic facilities for additional accelerated actions to prevent future leaks;

- Robust damage prevention program to minimize large volume leaks caused by excavation;
- System modernization program and annual targets to replace leak prone mains and services; and
- Annual leak backlog goals to drive year over year improvement, which are also tied to annual executive compensation goals.

Over the past five years, our Downstream Segment's Leak Management Program has resulted in continuous improvement in annual reported leaks and year-end leak backlogs. At calendar year-end 2022, Distribution Corporation had 67.5% fewer outstanding leaks than at calendar year-end 2018. Distribution Corporation also experienced a 26.5% reduction in new leak discoveries over this same period, demonstrating that our program has been effective in improving system integrity and safety.

Continuous Improvement through Utility Leak Management Program

Calendar Year-End 2018 - 2022



Methane Emissions Reduction Program

In 2021, Distribution implemented the Methane Emission Reduction Program. The Methane Emission Reduction Program is used to determine appropriate best management practices (BMPs) to minimize the release of methane from higher volume pipeline and station shutdowns. BMPs include:

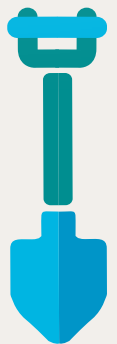
- Pipeline pressure draw down into adjacent pipeline or system using portable compressor equipment or existing regulator stations;
- Minimizing pipeline segment blowdown lengths through the use of existing valves and/or installation of controllable fittings and squeeze off of plastic pipe;
- Use of hot taps for tie-ins versus shut-down and cutting in tees; and
- Coordinating shut-downs for multiple projects/tasks to minimize shut-down and purging events.

Damage Prevention

National Fuel dedicates significant resources to educate and train contractors, our customers and the public on the importance of damage prevention and safe excavation practices through our “Call Before You Dig” awareness campaigns. These awareness campaigns have included customer newsletters, radio and print advertisements, social media posts, billboards and educational outreach to local municipalities and third-party excavators. Our Downstream Segment responded to over 177,000 requests for pipeline marking prior to excavation in 2022. As a result of our focus on public education and continuous improvement, our Downstream Segment has achieved a 27.6% decrease in excavation damage rates over the last five years. Additionally, operations personnel attend pre-construction meetings with contractors and facility owners to emphasize safe



27.6% decrease in
excavation damage rates
over the last 5 years



excavation practices. Company personnel also perform standby inspection during excavation near critical facilities such as transmission and high-pressure pipelines, or where trenchless construction near gas facilities is utilized.

To mitigate the impact of damages on service lines, over the past five years, Distribution Corporation has installed more than 48,500 Excess Flow Valves (EFVs) on all new and replaced medium and high-pressure service lines¹, which automatically shut-off the flow of gas if the service line is damaged. Distribution has installed approximately 198,000 EFVs to date.

Nearly all National Fuel operations personnel and every contractor employee are required to attend a class on operator excavation and backfilling in the vicinity of a pipeline. This class covers the safe operation of mechanized equipment in the vicinity of a gas facility, One-Call regulations, facility marking colors, proper support of pipelines and backfilling procedures. After class completion, operations field employees are considered “Damage Prevention Ambassadors” when interacting with excavators.

Our “Look Out for the Mark Out” program continues to prevent damages to our pipelines. Through a series of tiered monetary awards, employees are incentivized to intervene in excavation activity near Company facilities being performed without a One-Call request. In 2022, National Fuel employees intervened in more than 180 such excavations with the potential to result in damage to our facilities. Since inception of the program in 2015, employees have reported over 1,800 occurrences, ranging from landscaping done with hand tools to large-scale building projects with heavy equipment. This past year, National Fuel increased these awards to further encourage participation in the program.

¹ EFVs are installed on all new and replaced medium and high pressure services meeting the requirements of 49 CFR § 192.383.

National Fuel employees review the components of a natural gas meter set and corresponding facilities.



In addition to the workplace damage prevention within the Company, our Damage Prevention Coordinators are involved with several external organizations that focus on local initiatives to prevent damages to underground utility lines by sharing information, promoting public awareness, providing networking resources and problem resolution:

- UDigNY Board of Directors;
- Damage Prevention Council Committee;
- Western New York Damage Prevention Council;
- Pennsylvania One Call Board of Directors; and
- Erie and Crawford County Utility Coordination Committees.

To further target and prevent potential damages, National Fuel uses a risk modeling system that looks at past damages and identifies work types that pose a greater threat to our facilities in the Company's operating territories. Distribution Corporation uses third-party damage prevention inspectors to seek out high risk tickets based on our risk modeling and complete a jobsite visit. Jobsite visits include meeting with the excavator to educate them on code, safety and precautions that must be taken while digging around our facilities.

Our Public Awareness Program

Our Downstream and Midstream segments' Public Awareness Program was established in 2006 and is designed to enhance public safety by increasing the public's knowledge of pipeline locations and safety issues. By sharing information with key stakeholder audiences, including the affected public, emergency responders, excavators and public officials, National Fuel endeavors to raise the awareness of our pipeline facilities and help the public better understand the role they can play in pipeline safety.

Public Awareness Program

Educational Objectives

- Use of a One-Call notification system prior to excavation and other damage prevention activities.
- Identification of possible hazards associated with unintended releases from a gas pipeline facility.
- Recognition of physical indications of a possible release.
- Steps to be taken for public safety in the event of a gas pipeline release and procedures to report such an event.

Major Elements

- Establishing and maintaining liaisons with appropriate fire, police, public officials and utility owners.
- Direct mail program, whereby audience-specific pipeline safety brochures are mailed to:
 - Landowners, residents, schools and businesses within 660-feet of DOT jurisdictional transmission pipelines
 - Excavators, emergency officials and local public officials in our service territory.
- In 2022, pipeline safety brochures were mailed to over 34,000 stakeholders.
- Collaboration with the Northeast Gas Association on a regional pipeline safety media campaign for the Northeast United States.
- Bill inserts, newspaper and online ads and news releases regarding pipeline safety. In 2022, over 24 million impressions were made using radio, digital platforms and television advertising concerning natural gas and pipeline safety topics within Distribution's service area.
- Meetings with municipal planning and permitting officials, to encourage them to:
 - Make permit applicants aware of one-call regulations and require inclusion of natural gas pipelines and easements on subdivision and site plans to prevent excavation damages and future encroachments.
- Dedicated Stakeholder Engagement web page
- Entering into Encroachment Agreements with excavators, drilling operators, loggers, other pipeline operators, utilities and homeowners, allowing them to encroach upon National Fuel's pipeline right-of-way provided certain safety and insurance measures are followed. In 2022 National Fuel entered into 36 encroachment agreements.
- Land Department and Operations personnel participate in regional pipeline safety meetings for the benefit of excavators and emergency responders.
- Written correspondence to school principals including a sampling of National Fuel's pipeline safety brochures for distribution to student body and/or educators, along with contact information if additional brochures are desired. In 2022, National Fuel contacted 97 schools in its service territory regarding pipeline safety.
- New initiatives in 2023 include public awareness mailings regarding pipeline safety in the agricultural and forestry industries.

System Safety

Our Downstream and Midstream segments maintain robust integrity management programs to identify and mitigate risks; ensuring safety of our distribution and transmission pipeline systems and underground gas storage assets. In addition to the integrity management programs discussed below, these segments maintain a high level of pipeline safety and integrity during day-to-day operations and regularly scheduled inspection and maintenance activities.

Distribution Integrity Management Program

The purpose of the Distribution Integrity Management Program (DIMP) is to enhance safety by identifying and reducing risks to the gas distribution pipeline system. The Company integrates available information about its pipelines to inform its risk decisions, including but not limited to pipeline material, leakage history by cause and historical excavation activity. The DIMP was designed to enhance knowledge of the existing system and identify and invest in risk control measures beyond prescriptive regulatory requirements.

Over the past year, the Company has implemented a new probabilistic risk model to assist in guiding decisions made to improve system safety and integrity. The new model interfaces with the National Fuel Geographic Information System (GIS) to further enhance asset risk analysis across the entire distribution system, including risks associated with low-probability, high-consequence incidents. The model calculates risk on an asset-by-asset basis to give Company personnel a granular look at where in the system risk is elevated and is able to show aggregate risk in an area. The new model allows our engineers to run “what-if” scenarios to evaluate pipeline and station replacement and other mitigative measures, such as increased leak survey frequency, to focus efforts on measures that provide the greatest benefit to safety.

In addition to the risk model implementation, many programs within the DIMP are being integrated into a PSMS to encourage safety and integrity across the system as well as ensure consistency and control across the Downstream business segment.

Transmission Integrity Management Program

Distribution Corporation operates seven transmission pipelines totaling 109 kilometers in length. Over 90% of this pipeline length is characterized as low stress, which means it operates with a higher factor of safety compared to similar higher-pressure pipelines. Only 8.9 kilometers of Distribution’s transmission lines are in High Consequence Areas (HCAs), requiring regular integrity assessments at least once every seven years. The table below shows Distribution’s pipelines inspected under our integrity management assessment program including both HCA and non-HCA pipe segments.

Percentage of Downstream Segment Transmission Pipelines Inspected¹

	2020	2021	2022
Transmission Pipelines (Kilometers)	110	109	109
Pipelines Inspected (Kilometers)	7	0.7	2.91
% of Pipelines Inspected	6.4%	0.6%	2.7%
% HCA Pipeline Inspected	29.8%	7.9%	32.7%

Distribution Corporation’s transmission pipelines are operated under the National Fuel Gas Company Transmission Pipeline Integrity Management Program along with the transmission pipelines of National Fuel’s Midstream Segment subsidiaries. See [Operational Safety, Emergency Preparedness and Response](#) for additional information on our Transmission Pipeline Integrity Management Program.

¹ PHMSA 2022 Gas Transmission and Gathering Annual Report for the Utility subsidiary. The Pipeline Inspected Length and Percentage may count the same mileage twice in limited instances where a different inspection method is utilized on the same segment of pipe, in the same year, to inspect for multiple threats.

Pipeline Safety Management System

The American Petroleum Institute (API) developed a safety management system standard specific to the pipeline industry. A Safety Management System (SMS) provides a systematic approach to managing safety, including the processes, policies and procedures an organization uses to direct and control its activities. Stakeholders from across the pipeline industry including operators, regulators, industry trade associations and safety experts representing the public, collaborated in the development of API Recommended Practice (RP) 1173 on PSMS.

In 2019, our Downstream and Midstream segments, along with American Gas Association (AGA) membership, committed to implementing an API RP 1173 compliant PSMS. The Company first performed a gap analysis evaluating alignment of existing programs and procedures with API RP 1173 requirements, followed by

the ongoing development of a web-based safety management software system to support our PSMS implementation. Development continued in 2022 with a team of internal subject matter experts from a variety of functional areas working collaboratively with our vendor. Modules focusing on corrective and preventative actions as well as inspections were developed first. The Company is currently developing modules which will enable us to:

- Enhance inspections and observations of work activities to validate compliance with safety and work procedures;
- Enhance safety event reporting including incidents, near misses and safety observations by employees and contractor personnel;
- Facilitate root cause analysis and implementation of lessons learned from within our Company and our industry;
- Support design approvals and work permitting;
- Manage change throughout the organization using standardized workflows and action tracking; and
- Facilitate two-way safety communications with front line Company and contractor personnel.



One of the key elements of a PSMS is investigating events and near misses that led or could have led to an incident and evaluating lessons learned to improve processes and procedures to prevent recurrence.

Safety Program Elements

Inspection and Maintenance Programs	DIMP Essential Elements	API RP 1173 Elements
<ul style="list-style-type: none"> Quarterly, semi-annual and annual pipeline patrols; Leakage surveys, including business district, public buildings and frost surveys, as well as additional targeted risk-based quarterly and semi-annual leak surveys; Monthly leak surveys of schools, hospitals and nursing homes; Annual regulator and valve inspections; Annual pressure regulating station inspections; Continuous SCADA and remote monitoring of operating pressures; Atmospheric corrosion inspections; Odorant inspections; Bi-monthly and annual cathodic protection monitoring; Annual emergency valve inspections; Underwater inspections of waterbody crossings; Incident investigation and root cause analysis; and Plastic system leak analysis and remediation program. 	<ul style="list-style-type: none"> System knowledge including material, construction practices and operational data; System threats including corrosion, excavation damage, other outside force damage, natural force damage, pipe, weld or joint failure, equipment failure, incorrect operation; Evaluating and ranking risks based on the probability and consequence of failure; Identifying and implementing measures to address risks through new safety programs and targeted accelerated actions; Measuring performance, monitoring results and evaluating effectiveness using performance measures and reviewing data trends; Periodic evaluation and improvement through annual program reviews; and Reporting results through management and regulatory reporting. 	<ul style="list-style-type: none"> Leadership and management commitment; Stakeholder engagement; Risk management; Operations controls; Incident investigation, evaluation and lessons learned; Safety assurance; Management review and continuous improvement; Emergency preparedness and response; Competence awareness and training; and Documentation and record keeping.



Employee and Contractor Operational Training

National Fuel's Training and Qualification process prioritizes the safety of our customers, employees and the communities we serve. The Company recognizes that a comprehensive training program is a prerequisite to a best-in-class qualification program. Our contractors receive the same level of training as our own employees, with this training occurring at Company training centers by National Fuel trainers.

Training includes lecture components as well as practical skills and experience components. Training classes are designed to build off each other, starting with the basics and taken sequentially. There is also an expectation that between each part, the material and concepts covered in the previous part are bolstered with on-the-job reinforcement/training. The Company constructed its centralized testing facility where we oversee our Hybrid Operator Qualification platform, which allows customization of Operator Qualifications to align with specific company policies and procedures. The following programs and groups play a vital role in our safety and training commitments:

- **Operational Compliance Program:** Designed such that the material presented within each part of training will be up to date with current regulations and Company procedures.
- **Quality Assurance Group:** Identifies appropriate required changes or areas for improvement for training content and classroom material, assesses trainers and class content and manages field assessments performed by Operations supervisors.
- **Training Department and Field Operations Development Departments:** Accompany individuals into the field following completion of an Operator Qualification Training Part to reinforce class material under real-world conditions.

Extensive Operator Qualification Training

Example - Gas Mechanic Training

First Month of Employment (3 Days)

- Basic Properties of Gas
- Operation and Maintenance Initial Training

2-6 Weeks After Part 1 (6 Days)

- Joining of Plastic Pipe
- Installation of Pipe

STOP! FIELD TRAINING REQUIRED
(minimum six weeks of On-The-Job-Training)

Once Field Training Completed (5 Days)

- Relighting Gas Appliances
- Operation of Valves

4 Months of OJT Prerequisite – Parts 1 & 2 (2 Days)

- Purging/Pigging
- Pressure Testing

6 Months of OJT Prerequisite – Parts 1, 2, 3 & 4 (5 Days)

- Tapping/Stopping
- Squeezing/Bagging
- Leak Repair

6 Weeks of OJT Prerequisite – Part 1 (3 Days)

- Leak Survey
- Leak Reporting

Other Required Classes (Part 1 is Prerequisite)

- Line Locating (4 Days)
- Work Area Protection (1 Day)
- Trenching and Shoring (1 Day)
- Fire School (1/2 Days)

Supervisory Development

Field Operations Development

National Fuel's Field Operations Development (FOD) team closely supports field operations employees to improve overall safety, quality, customer service and efficiency. FOD completes routine field visits with experienced hourly employees while tasks are being performed to maintain a high standard of on-the-job safety, quality and compliance. In addition to existing staff, FOD is instrumental in onboarding new field employees and supervisors as well as transitioning existing employees to new roles. Our gas mechanic orientation is five days of safety, procedural and equipment review. Once through orientation, employees are placed in the field where they undergo at least 12 target visits from FOD within their first year and are required to demonstrate proficiency. FOD also completes target visits on Field Service Representatives, Meter Readers, Measurement and Regulation Technicians, and Corrosion Technicians. In 2022, FOD performed 685 field visits, 429 were targeted visits with new employees.

Supervisory Development Program

The Quality Assurance Department administers the Operations Supervisor Development program. This program covers a variety of topics intended to help educate and support supervisors in their first years of supervision. The goal of this program is to strengthen/develop our new supervisors by introducing common operational and safety topics and to encourage consistent responses/solutions to each situation or topic.

“Our entire Operations Team is focused on safely delivering natural gas to our customers and communities. We continue to engage with the public and improve system safety through awareness campaigns, collaboration with first responders and damage prevention programs. This focus reflects the Company's constant commitment to providing a safe and reliable service.”

William Snyder
Assistant Vice President
National Fuel Gas Distribution Corporation



Safety Training

With safety as a guiding principle at National Fuel, it is imperative that every employee and contractor return home safely each day. Over the past three years, our Downstream and Midstream segments have invested more than 453,000 hours on safety meetings, training and operator qualification for our hourly field personnel. In 2020, National Fuel completed a \$1.6 million capital expansion of its NY training facilities to increase training capacity and to accommodate live, hands-on scenarios that simulate real-world conditions.

Extensive employee safety training and awareness, including the following topics:¹

• Aerial Work Platforms	• Hazardous Waste Operations and Emergency Response
• Asbestos Awareness	• HAZCOM (Hazard Communication)
• ATV / UTV Safety	• Hearing Loss Prevention
• Coal Tar Pipe Removal	• Hydrogen Sulfide Awareness
• Confined Space Awareness	• Incident Command System
• Crane Operation	• New Employee Safety Orientations
• Dog Bite Prevention	• NORM (Naturally Occurring Radioactive Materials)
• Driver Training (in vehicle)	• PCBs
• Emergency Response Plan and Drills	• Powered Industrial Material Handling Vehicles
• Ergonomics	• Respirator Use
• Excavation Competent Person	• Safety Leadership
• Fall Protection	• Vehicle Recovery & Winching
• Fire School	• Wild Well Control
• First Aid/CPR/AED	• Work Area Protection & Flagging
• Hazardous Energy Control	

¹ Employee safety training is directed based on employee roles, responsibilities and needs.

² Training hours calculated on a fiscal year basis.

Safety Meeting, Training and Operator Qualification Hours²

	2020	2021	2022
Training Hours	148,231	165,434	140,019
Average Hourly Operations Employees	758	784	788
Average Training Hours/Employee	196	211	178

“Safety is an integral part of our Company culture. We are committed to providing and maintaining safe and healthy working conditions and following sound operating practices that safeguard our employees and the communities we serve.”

Michael Parker
Manager, Safety



Employee and Contractor Safety

Across the Company, we implemented safety programs and management practices to ensure that a culture of safety is prioritized and embraced throughout the entire organization. Safe 4 the Right Reasons™ Safety Culture Program¹ promotes safe behaviors at work and at home, and its core principles have been incorporated into every element of our safety programs. Through this program, in 2022, the Company rolled out live presentations focused on inspiring teamwork for safety, with the executive management team participating in the live trainings to endorse the program and reemphasize safety as a core value.

Strengthening our Safety Culture

Safety Communication and Engagement	Safety Preparedness	Field Safety Guidance
Safety Department publishes weekly safety tips including lessons learned	Tabletop simulations and live drills for emergency response preparedness including participation of local first responders	“Stop Work Responsibility” expected of all employees and contractors if they observe an unsafe practice or abnormal operating condition
Intranet Safety Resource Center	Vehicle and driver safety training, including the use and review of driver cameras	Personal protective equipment construction site work rules, safety procedures and guidelines
Safety surveys of Operations employees every six months to manage and improve our safety culture	Employee and management safety calls to identify and review lessons learned, set safety expectations and raise awareness	Comprehensive web-based operating procedures to ensure safety and operational compliance

The Company requires contractor safety pre-qualifications and reporting on environmental, health and safety (EHS) performance. In addition to complying with all Operator Qualification and insurance requirements, our core group of pipeline contractors are pre-qualified for safety by an independent, third-party service provider specializing in this function. Contractors are required to submit documentation verifying compliance with all Occupational Safety and Health Administration (OSHA) and other mandated safety training, as well as information related to injuries and incidents on a quarterly basis. The third-party specialist audits the contractor safety programs and utilizes statistical information to develop composite safety scores for each contractor. Our Downstream and Midstream Segments review contractor safety scores prior to awarding bids to ensure contractors have appropriate and effective safety programs in place. In the event contractor safety scores become unsatisfactory, we work collaboratively with contractors to implement safety improvement plans and increase inspection levels to ensure safety on our jobsites. Although rare, if safety performance does not improve to acceptable levels, a contractor will be removed from our qualified bidder list.

Continued Focus on Improving Safety and Reducing Injuries

Our Operations Department continues to focus on improving safety and reducing injuries of our field employees. In 2022, Distribution Corporation implemented a safety plan focused on reducing injuries and promoting operational safety. The plan is an effort to continuously seek fresh ideas, new approaches and involvement from Operations supervisors and managers.

¹ The Safe 4 the Right Reasons™ Safety Culture Program is a product of DiVal Safety Equipment, Inc.

Safety Leadership

National Fuel has played a significant safety leadership role in our industry through our participation with trade associations such as the AGA and INGAA. Most recently, National Fuel has served in a leadership capacity with the AGA in the development of emergency response and building evacuation protocols for our industry. Our General Manager of Safety served as Vice-Chair on the AGA Gas Filled Occupancy (GFO) Task Force to:

- Evaluate and learn lessons from past incidents of GFO incidents;
- Investigate technology options to identify GFO's; and
- Provide data useful for natural gas utility companies to make informed decisions when developing or enhancing GFO response procedures, to reduce the potential for injuries and fatalities.

For his work on this initiative, our General Manager of Safety was awarded the AGA "Trailblazer Award."

Michael Anderson
General Manager, Safety



Continual Improvement of Our Operational Safety Plan

Management's Continued Safety Focus...

- Operations and Safety Departments' leadership meet at least quarterly to review injury trends and review concerns raised at safety meetings
- Established universal performance safety goals for all Operations supervisors
- Retain external safety consultant to present and set work plan and execution expectations

With Feedback from Operations Teams...

- Engage Operations focus groups to align teams and reinforce safety culture
- Pilot safety culture survey

Strengthens Safety Culture...

- Supervisory "Safety Day" training sessions focused on supervisor safety responsibilities
- Create location-specific safety teams with a member of Operations management attending each meeting, with universal agenda items across locations
- Developed series of shift kick-off safety meetings and messages to be presented at all service locations

And Drives Operational Improvements.

- "Safety First" focus for all project planning, pre-project communications, and execution in the field
- "Safety Stand Downs" for specific topics to address reoccurring and serious safety issues
- Root Cause Analysis drives specific action plans to prevent injury recurrence

Future Direction

National Fuel embraces continuous improvement throughout our organization. The continued implementation of web-based Safety Management System software will provide the tools necessary to improve our programs for identifying and controlling employee exposures to hazards and improve on the delivery of safety training and messaging for management and hourly workers. Sustaining the Company's safety culture through robust management support and programs like Safe 4 the Right Reasons™ will ensure all levels of the organization remain aligned around the guiding principle of safety for our co-workers, our customers and our pipeline system.

Gatekeepers

At National Fuel, the safety of employees, customers and community is our top priority. As gatekeepers, our field personnel encounter hundreds of customers daily and are able to identify unusual or suspicious situations when elderly or diminished capacity customers need assistance. Under the Gatekeeper program, employees are on the lookout for the warning signs below as they interact with our customers and are encouraged to contact their supervisor if they believe someone requires assistance.

- Unshoveled driveways/walkways;
- Snow covered home vents/exhausts;
- Mail piling up;
- Difficulty paying bills;
- Declining condition of home/lawn;
- Difficulty seeing, speaking, hearing or moving; and
- Unattended children or pets.



Mike Conway (left), Meter Reader and his supervisor, Tim DeSanto

Mike Conway, National Fuel Meter Reader, demonstrated what it means to be a Safety Gatekeeper. While out on the job, Mike was approaching a house when he heard a chainsaw idling. He didn't see anyone in the vicinity but did notice a fallen tree. As he got closer to the meter, it was then that Mike heard a voice yelling for help and found a man lodged underneath the fallen tree. He first asked if the man was ok, and after the man said he was, Mike turned the chainsaw off and lifted the tree high enough for the man to free himself from underneath.

OSHA Rate

The OSHA rates reported here are for Direct Full-Time Employees for National Fuel's Downstream and Midstream Segments.

OSHA Total Recordable Incident Rate (TRIR) ¹	2020	2021	2022
Downstream			
TRIR	2.88	2.45	3.26
Injuries	37	31	42
Hours Worked	2,572,247	2,525,864	2,578,906
Midstream²			
TRIR	0.48	0.94	1.38
Injuries	2	4	6
Hours Worked	836,072	848,934	870,090
Total Downstream & Midstream			
TRIR	2.29	2.07	2.78
Injuries	39	35	48
Hours Worked	3,408,319	3,374,798	3,448,996

OSHA Days Away, Restricted or Transferred Rate (DART)	2020	2021	2022
Downstream			
DART	2.57	1.74	2.25
Incidents	33	22	29
Hours Worked	2,572,247	2,525,864	2,578,906
Midstream			
DART	0.24	0.71	0.92
Incidents	1	3	4
Hours Worked	836,072	848,934	870,090
Total Downstream & Midstream			
DART	2.00	1.48	1.91
Incidents	34	25	33
Hours Worked	3,408,319	3,374,798	3,448,996

Fatality Rate	2020	2021	2022
Total Downstream & Midstream			
Fatality Rate	0.00	0.00	0.00
Fatalities	0	0	0
Hours Worked	3,408,319	3,374,798	3,448,996

1 OSHA metrics for Downstream and Midstream Segments are measured on a fiscal year basis of October 1 to September 30.
 2 2020 and 2021 values for Midstream Segment are restated to include Midstream Company.

Distribution, Service and Transmission Pipeline Data

The following tables include the distribution pipeline, including service lines and transmission and regulated gathering pipeline lengths for Distribution Corporation.

Utility Distribution Pipeline Length (kilometers) – by Year¹

	2020	2021	2022
Mains	23,510	23,553	23,572
Services	12,332	12,354	12,399
Total	35,842	35,907	35,971

Utility Transmission and Regulated Gathering Pipeline Length (kilometers) – by Year²

	2020	2021	2022
Transmission	110	109	109
Regulated Gathering (Type B & Type R) ³	100	100	196

Total Utility Pipeline Length (kilometers) – by Year⁴

	2020	2021	2022
Distribution Mains (Kilometers)	23,510	23,553	23,572
Distribution Services (Number)	655,492	656,243	657,269
Distribution Services (Kilometers)	12,332	12,354	12,399
Transmission Pipelines (Kilometers)	110	109	109
Regulated Type B Gathering Pipelines (Kilometers)	100	100	77
Regulated Type R Gathering Pipelines (Kilometers)	0	0	118
Total Utility Pipelines (Kilometers)	36,052	36,116	36,276

1 DOT Gas Distribution Annual Report Form PHMSA F 7100.1-1 (2022).

2 DOT Gas Transmission and Gathering Annual Report Form PHMSA F 7100.2-1 (2022).

3 In 2021, PHMSA published the Gas Gathering Rule, which expanded reporting and documentation requirements to additional gathering pipelines in Distribution Corporation's systems.

4 DOT Annual Reports (2020-2022).

Reportable Pipeline Incidents, Corrective Action Orders and Notices of Probable Violations

The following table summarizes the number of PHMSA Reportable Pipeline Incidents, Corrective Action Orders and Notices of Probable Violation for Distribution Corporation during the period 2020 through 2022.

Distribution Corporation Incident and Compliance Summary

	2020	2021	2022
Reportable Gas Distribution Pipeline Incidents ⁵	1	0	0
Corrective Action Order Cases Initiated	–	–	0
Notices of Probable Violation Cases Initiated	–	–	–



5 Distribution Corporation had one natural gas pipeline incident self-reported to PHMSA, in accordance with 49 CFR §191, from 2020 to 2022. The incident was reported because of property damage that exceeded the PHMSA reporting threshold. The incident did not qualify as a "PHMSA serious incident" as defined by SASB.

Activity Metrics

	2020	2021	2022
New York			
Residential	500,300	504,817	505,245
Commercial	35,063	35,367	35,251
Industrial	427	445	444
Total Customers	535,790	540,629	540,940
Pennsylvania			
Residential	197,051	197,091	196,870
Commercial	15,987	16,102	16,148
Industrial	597	593	593
Total Customers	213,635	213,786	213,611
Total Distribution			
Residential	697,351	701,908	702,115
Commercial	51,050	51,469	51,399
Industrial	1,024	1,038	1,037
Total Customers	749,425	754,415	754,551

Amount of Natural Gas Delivered (MMcf)	2020	2021	2022
New York			
Bundled Retail Sales			
Residential	43,806	43,823	48,578
Commercial	5,605	5,805	6,703
Industrial	210	193	222
Total Retail	49,621	49,821	55,503
Transportation Sales			
Residential	5,847	4,418	4,193
Commercial	18,248	17,846	18,817
Industrial	17,317	17,193	18,266
Total Transportation	41,412	39,457	41,276
Pennsylvania			
Bundled Retail Sales			
Residential	16,107	16,298	18,090
Commercial	2,909	2,951	3,370
Industrial	263	252	346
Total Retail	19,279	19,501	21,806
Transportation Sales			
Residential	2,370	1,916	2,037
Commercial	6,179	6,280	6,685
Industrial	15,690	18,018	16,712
Total Transportation	24,239	26,214	25,435
Total Distribution			
Bundled Retail Sales			
Residential	59,913	60,121	66,668
Commercial	8,514	8,756	10,073
Industrial	473	445	568
Total Retail	68,900	69,322	77,309
Transportation Sales			
Residential	8,217	6,334	6,230
Commercial	24,427	24,126	25,502
Industrial	33,007	35,211	34,978
Total Transportation	65,651	65,671	66,711

Midstream



SAFE. RELIABLE. AFFORDABLE. SUSTAINABLE.



Our Midstream Segment remains focused on operating a safe and sustainable system to deliver reliable, clean energy to our customers. We remain focused on deploying capital to reduce the emissions profile of our existing operations through system modernization, best management practices and leveraging technology improvements.

Ron Kraemer
Chief Operating Officer
President of Supply Corporation and Empire Pipeline

Greenhouse Gas Emissions

Our Midstream Segment is committed to reducing GHG emissions. The ongoing modernization of our infrastructure helps to ensure the reliability of our natural gas pipeline systems, while driving further emissions reductions as we install more efficient and low emissions facilities. The further expansion of our pipeline system allows the Company to transport additional energy supplies to demand centers, facilitating regional and national emissions reduction efforts due to the low-carbon intensity of natural gas versus other readily-dispatchable fuels.

In 2022, both the Gathering and Pipeline & Storage businesses continued their efforts to lower our carbon footprint, working to install equipment to limit both operational and fugitive emissions in line with the Company's 2030 methane intensity reduction targets. As we continued to grow our business and add throughput to our systems, including the first full year of operations for Supply's FM100 project, we maintained our focus on installing efficient and low-methane intensity facilities.

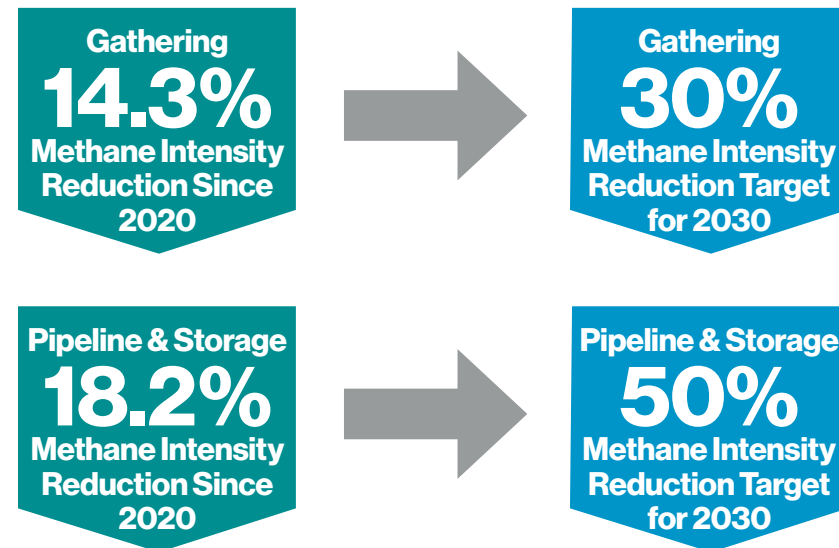
To date, drivers of our success in emissions intensity reduction from 2020 were:

- a combination of the implementation of our selected best management practices (BMP) under the EPA Methane Challenge program;
- a decrease in facility blowdowns; and
- continued growth in system throughput with facilities designed to lower overall methane intensity.

Our successful efforts to lower our methane emissions while meaningfully growing our business illustrates the Company's ongoing efforts to construct efficient and low-carbon intensity facilities and systems and our continued focus on reducing the emissions profile of our existing operations. We will continue to identify and execute on emissions reduction initiatives, utilizing enhanced LDAR and measurement techniques to help prioritize investment.

We expect our future progress towards our emissions reduction targets to reflect the implementation efforts from 2022. We plan to build our emissions reductions programs in the years ahead, focusing on investments in work practice improvements, maintaining our system modernization efforts and efficiencies leveraging technology enhancements, and exploring low-carbon initiatives.

Progress Towards 2030 Methane Emissions Intensity Targets (2020 Baseline)



National Fuel has numerous initiatives underway to accomplish its emissions reduction targets.

Measures to minimize methane emissions	Regulatory	Voluntary
Minimize pipeline blowdowns: <ul style="list-style-type: none"> Developed internal program to assess and select BMPs, where practicable BMPs include: Linepack draw down, portable compression, flaring, etc. 		X
Leak Detection and Repair ("LDAR") programs	X	
Installation of low-bleed, zero-bleed or air-driven pneumatic devices at new facilities wherever technically and practically feasible		X
Supply Corporation and Empire's use of vent gas recovery ("VGR") systems for planned compressor blowdown events where technically and practically feasible		X
Installation of VGR systems on turbine dry seals where technically and practically feasible		X
Routinely change rod packing on an interval basis, and investigate and install technologies to capture and route rod packing vents for a beneficial use where technically and practically feasible		X
Investigate and install engine upgrade packages to improve fuel efficiency and/or reduce methane emissions from engine exhaust where technically and practically feasible		X
Application of Best Available Technology ("BAT") for new/modified equipment	X	X
Application of Reasonably Available Control Technology ("RACT") at existing major source assets	X	
Methane Challenge Valve Maintenance and Replacement Program		X

We are committed to implementing new and innovative approaches for further methane reductions, including technology enhancements and work practice improvements. Since 2020, our Midstream Segment businesses have focused on driving emissions reductions through:

- Mitigating fugitive emissions at compressor stations (both transmission and storage industry segments) by addressing specific leak sources to maximize methane emissions reductions by targeting compressor unit isolation and blowdown valve leakage;
- Minimizing facility and pipeline blowdowns through engineering planning and installing vent gas recovery systems, where appropriate; and
- Transitioning to air-powered pneumatics.

As participants of the EPA's Methane Challenge, each Midstream Segment subsidiary submitted its third annual progress report for reporting year 2021 to the EPA in October 2022. The following tables include a summary of reported methane reductions for reporting year 2021.

2021 Methane Reductions via EPA's Methane Challenge (Metric Tons CO ₂ e) ^{1,2,3}	2019	2020	2021
Pipeline & Storage (Empire & Supply Corporation)	9,604	10,004	17,048
Gathering (Midstream Company)	4,732	7,732	14,512
Total Midstream Segment	14,336	17,736	31,560

1 EPA's Methane Challenge Program submission of Reporting Year (RY) 2021 occurred in October 2022 for each of National Fuel's Midstream Segment subsidiaries. It is anticipated RY 2022 will follow the same timeline and will be noted in next year's report.

2 For RY 2019 and 2020, the reductions came from the selected BMPs under the Methane Challenge Program for pneumatic devices and rod packing. RY 2021 included additional reductions from the fugitive emissions BMP that target isolation and blowdown valves.

3 CO₂e values have been calculated in accordance with the published 100-year time horizon global warming potential (GWP) values from the IPCC Fifth Assessment Report (AR5, 2014) as preferred by SASB.

Supply Corporation is a member of INGAA and actively participates in INGAA's Environmental Committee, including the committee's GHG Task Force that seeks to develop and share best practices among industry peers. Our Pipeline & Storage businesses adhere to [INGAA's Voluntary Greenhouse Gas \(GHG\) Emissions Commitments](#), as well as INGAA's Integrity Management - Continuous Improvement (IMCI) initiatives focused on safely supporting the energy transition. As further described in [Operational Safety, Emergency Preparedness and Response](#), these initiatives focus on modernizing natural gas gathering, transmission and storage networks with the goal of reducing emissions and minimizing climate impacts.

In August 2021, National Fuel and its subsidiaries joined Our Nation's Energy Future (ONE Future) Coalition. This Coalition is comprised of natural gas companies that are working to voluntarily reduce methane emissions across the value chain to 1% or less. Additionally, National Fuel has committed to the GTI Energy's [Project Veritas](#) as an Initiative Partner. Project Veritas aims to expedite methane emission reductions by developing transparent technical protocols for calculating methane emission methodologies and intensities across the natural gas value chain.



Using Technology to Minimize Methane Emissions

Tamarack Compressor Station – Crossfork, Pennsylvania

- Empire incorporated a VGR system for planned compressor blowdown events during the design and planning phase of its Farmington Compressor Station, which went into service in 2020. Supply Corporation is working to implement similar technology at Tamarack Compressor Station, pictured above.
- VGR systems at Tamarack and Farmington compressor stations capture the gas typically vented during a planned and routine compressor unit blowdown, and that volume of gas is then routed and recompressed into the station suction header piping for recovery, which reduces operational emissions.

Scope 1 Greenhouse Gas Emissions

Our Midstream Segment reports GHG emissions from both stationary and fugitive sources at our operating facilities, including all sources under the EPA's Mandatory Greenhouse Gas Reporting¹ as well as sources covered under the AGA, Natural Gas Sustainability Initiative (NGSI) and ONE Future protocols. Our Midstream Segment's Scope 1 GHG emissions disclosure also includes mobile sources/fleet vehicles and office buildings.

Scope 1 emissions data is provided in units of metric tons on a carbon dioxide equivalent (CO₂e) basis, as the sum of three of the seven GHG pollutants covered under the Kyoto Protocol (CO₂, CH₄, and N₂O).^{2,3} In addition to gross Scope 1 emissions, we are providing the amount of those emissions from methane. Gross emissions are GHGs emitted to the atmosphere. Despite meaningful growth, the Midstream Segment was able to maintain flat methane emissions, which reflects the Company's focused investment on limiting our emissions profile through efficient and low-carbon intensity facilities.

Scope 1 Greenhouse Gas Emissions (Metric Tons CO₂e)

		2020	2021	2022
Empire	EPA Mandatory Reporting Sources ⁴	31,145	94,816	87,576
	Additional EPA Sources ⁵	24,129	3,814	1,501
	Other Sources ⁶	4,605	7,482	7,482
	Total Empire	59,879	106,112	96,559
Supply Corporation	EPA Mandatory Reporting	288,389	256,773	277,514
	Additional EPA Sources	184,517	156,643	177,252
	Other Sources	10,375	10,786	14,137
	Total Supply	483,281	424,202	468,903
Midstream Company	EPA Mandatory Reporting	506,979	514,740	542,873
	Additional EPA Sources	8,221	12,660	11,837
	Other Sources	615	665	709
	Total Midstream Company	515,815	528,065	555,419
Total Midstream Segment	EPA Mandatory Reporting	826,513	866,329	907,963
	Additional EPA Sources	216,867	173,117	190,590
	Other Sources	15,595	18,933	22,329
	Total Midstream Segment⁷	1,058,975	1,058,379	1,120,882

1 Midstream Segment's facilities are subject to Greenhouse Gas Mandatory Reporting (40 CFR Part 98). Our facilities fall under the Petroleum and Natural Gas Systems source category (i.e., 40 CFR Part 98 Subpart W), which consists of the following impacted industry segments: onshore natural gas transmission compression, underground natural gas storage, onshore natural gas gathering and boosting, and onshore natural gas transmission pipeline. Facilities with actual GHG emissions greater than 25,000 metric tons of CO₂e (i.e., GHGRP reporting threshold) are subject to monitoring and reporting of GHG emissions. Facilities with actual GHG emissions less than 25,000 metric tons of CO₂e are not subject to reporting of GHG emissions.

2 HFCs, PFCs, and SF₆ emissions have been evaluated for this report and determined to be de minimis. As these emissions are not material, the Midstream Segment has not included them in the data. Nitrogen trifluoride (NF₃) is associated with a few specialized industrial processes (e.g., manufacture of solar panels, lasers, semiconductors, etc.) and is not applicable to National Fuel operations.

3 Emissions for each pollutant have been calculated in accordance with the methodology prescribed by the U.S. EPA's GHGRP (40 CFR Part 98, as applicable). CO₂e values have been calculated based on those values in accordance with the published 100-year time horizon global warming potential (GWP) values from the IPCC Fifth Assessment Report (AR5, 2014) as prescribed by SASB. Currently, the U.S. EPA requires CO₂e to be calculated using IPCC Fourth Assessment Report (AR4) under the GHGRP.

4 Facilities with actual GHG emissions greater than 25,000 metric tons of CO₂e (i.e., GHGRP reporting threshold) are subject to monitoring and reporting of GHG emissions. Facilities with actual GHG emissions less than 25,000 metric tons of CO₂e are not subject to reporting of GHG emissions.

5 EPA Part 98 sources that do not reach minimum threshold to mandate annual reporting.

6 Other sources included by NGSI and ONE Future, along with fleet and office buildings.

7 Total values between charts may vary slightly due to conventional rounding.

Scope 1 Methane Emissions (Metric Tons CH₄ as CO₂e)

		2020	2021	2022
Empire	EPA Mandatory Reporting	3,573	5,194	6,230
	Additional EPA Sources ¹	4,011	3,315	1,319
	Other Sources ²	4,600	7,475	7,475
	Total Empire	12,184	15,984	15,024
Supply Corporation	EPA Mandatory Reporting	111,394	96,270	119,081
	Additional EPA Sources	152,378	114,826	118,065
	Other Sources	7,186	7,442	10,780
	Total Supply	270,958	218,538	247,926
Midstream Company	EPA Mandatory Reporting	138,582	134,962 ³	147,321
	Additional EPA Sources	1,217	1,632 ³	1,236
	Other Sources	511	526	536
	Total Midstream Company	140,310	137,120	149,093
Total Midstream Segment	EPA Mandatory Reporting	253,549	236,426	272,632
	Additional EPA Sources	157,606	119,773	120,620
	Other Sources	12,297	15,443	18,791
	Total Midstream Segment⁴	423,452	371,642	412,043

1 EPA Part 98 sources that do not reach minimum threshold to mandate annual reporting.
 2 Other sources included by NGSi and ONE Future, along with fleet and office buildings.
 3 Minor adjustment due to a typo in 2021 disclosure.
 4 Total values between charts may vary slightly due to conventional rounding.
 5 While the Company expects installation of new technologies to help drive emissions reductions, the supply chain constraints and commissioning challenges surrounding these new technologies have delayed certain emissions reduction projects from being placed into service as scheduled.

Flared Hydrocarbons, Other Combustion, Process Emissions, Other Vented Emissions and Fugitive Emissions

The following table shows a breakdown of GHG emissions by major source category for the Midstream Segment subsidiaries. The largest contribution to CO₂e emissions overall is from combustion sources, primarily carbon dioxide from compressor station engines, with respect to which our Midstream Segment utilizes various mitigation strategies to minimize emissions. In recent years, the Company significantly grew its FERC-regulated pipeline businesses, adding over 0.5 Bcf per day in incremental firm transportation capacity through the Empire North project and FM100 expansion and modernization project, which both drove the increase in combustion emissions. Additionally, Midstream Company continues to add compression facilities to optimize capabilities of its gathering network.

To mitigate emissions from combustion sources, the Company is focused on engine upgrades, where feasible, with improved combustion technologies. The Company recently installed its first solar array to power a field office and previously placed into service its first electric-driven compressor station. We are continuing to evaluate the environmental benefits and the technical and economic feasibility of deployed technologies for consideration in the future. Moreover, we are exploring the impacts of hydrogen fuel blending as it relates to the engine performance and exhaust stack emissions.

The next largest source categories contributing to overall GHG emissions are vented sources (which would include, among other things, pneumatic devices and blowdowns) and fugitive sources (including component leaks, compressor seal/rod packing venting and compressor unit isolation and blowdown valve leakage). At a number of Midstream Company sites, the Company plans to replace pneumatic devices with air systems. In 2022, the Company commenced a number of VGR projects to capture and recover natural gas from centrifugal compressor dry gas seals, compressor rod packing and planned compressor blowdown events. We expect that the completion of these projects will help drive future progress towards our emissions reductions targets.⁵

Scope 1 GHG Emissions by Source Category (Metric Tons CO₂e)

		2020	2021	2022
Empire	Flared Hydrocarbons	3	2	0
	Combustion Sources	47,710	90,165	81,570
	Process Emissions	–	–	–
	Vented Emissions	4,258	7,218	5,519
	Fugitive Emissions	7,908	8,727	9,469
	Total Empire	59,879	106,112	96,560
Supply Corporation	Flared Hydrocarbons	386	397	330
	Combustion Sources	211,903	205,422	220,780
	Process Emissions	357	291	255
	Vented Emissions	88,181	71,886	65,725
	Fugitive Emissions	182,455	146,207	181,814
	Total Supply	483,282	424,203	468,904
Midstream Company	Flared Hydrocarbons	4,011	8,860	11,397
	Combustion Sources	374,104	388,316	403,363
	Process Emissions	41,816	34,040	50,875
	Vented Emissions	92,312	92,466	86,034
	Fugitive Emissions	3,571	4,382	3,750
	Total Midstream Company	515,814	528,064	555,419
Total Midstream Segment	Flared Hydrocarbons	4,400	9,259	11,727
	Combustion Sources	633,717	683,903	705,714
	Process Emissions	42,173	34,331	51,129
	Vented Emissions	184,751	171,570	157,278
	Fugitive Emissions	193,934	159,316	195,033
	Total Midstream Segment¹	1,058,975	1,058,379	1,120,882



Farmington Compressor Substation
Farmington, New York

Scope 2 Greenhouse Gas Emissions

The chart below reflects the Midstream Segment Scope 2 emissions data from our operating facilities.²

Scope 2 Emissions (Metric Tons CO₂e)

	2020	2021	2022
Empire	881	1,634	582
Supply Corporation	4,738	4,490	4,400
Midstream Company	629	794	843
Total Midstream Segment	6,248	6,918	5,825

¹ Total values between charts may vary slightly due to conventional rounding.

² Scope 2 emissions were calculated using Sub-Region Emission Factors from US EPA GRID Power Profiler, <https://www.epa.gov/egrid/power-profiler/>.

Air Quality

As part of our air quality compliance program, we are required to calculate and report emissions from stationary and fugitive emissions sources at operating facilities that meet specified reporting criteria, which varies by state. This includes all Midstream Segment compressor stations and other facilities with stationary sources (e.g., interconnects with engines or dehydration units) in Pennsylvania and New York. Emissions from fleet vehicles are also included.

Emissions are calculated using the best available data in accordance with agency guidelines and accepted methods, which include, but are not limited to:

- Records of source operating hours, fuel consumption and other key operating parameters (e.g., throughput, temperature and pressure, etc.);
- Site-specific analyses, periodic monitoring and stack test results;
- Emissions modeling software (e.g., GRI-GLYCalc, TankESP, ProMax, etc.);
- Published emission factors (e.g., Manufacturer, AP-42, 40 CFR 98 Subpart W); and
- Records of leaks discovered and leak duration.

The Company is committed to minimizing emissions by operating our facilities in a manner consistent with applicable air quality control standards. All new sources are designed to best available technology for better emission standards. Existing sources at Title V facilities have incorporated requirements to meet RACT standards for NO_x and VOC emissions. In addition to regulatory mandates to reduce emissions, each of National Fuel's subsidiaries has made voluntary emission reduction commitments under EPA's Methane Challenge Program, which are expected to reduce methane and VOC emissions over the upcoming years.

The following table includes emissions from stationary sources at all Midstream Segment facilities and fleet vehicles.

Criteria Pollutants (Metric Tons) - NO_x, SO_x, Volatile Organic Compounds (VOCs), and Particulate Matter (PM₁₀)

		2020	2021	2022
Empire	NO _x	18	24	26
	SO _x	2	3	4
	VOC	3	4	5
	PM ₁₀	1	2	2
Supply Corporation	NO _x	448	411	412
	SO _x	4	3	3
	VOC	268	245	250
	PM ₁₀	25	14	14
Midstream Company	NO _x	317	330	355
	SO _x	3	3	3
	VOC	91	77	91
	PM ₁₀	13	16	16
Total Midstream Segment^{1,2,3}	NO _x	783	765	793
	SO _x	9	9	10
	VOC	362	326	346
	PM ₁₀	39	32	32

1 Total values may vary slightly compared to sum due to conventional rounding.

2 Minor adjustment due to typo in 2020 disclosure.

3 Minor adjustment due to typo in 2021 disclosure.

Ecological Impacts

Management of Environmental Program, Policies and Practices

Environmental stewardship is one of National Fuel's guiding principles. The procedures, technologies and best management practices utilized to operate and grow our company exemplify our dedication to respecting and protecting the environment. The importance of environmental compliance is emphasized throughout all levels of the Company, including executives, managers, inspectors, engineers, union employees and the environmental team, as well as with our contractors. The environmental team at National Fuel consists of educated and experienced personnel with specializations in the following fields: civil engineering, environmental engineering, botany, biology, forest ecology, stream and wetland ecology, integrated environmental management, geographic information systems, environmental modeling and analysis, environmental law, sustainability, environmental health and safety, forestry and environmental science.

At National Fuel, the environmental engineering group facilitates and ensures compliance by coordinating effective management policies and practices for our projects and assets within our service territory. The Company maintains guidance relating to resource impact minimization and environmental compliance such as National Fuel's Engineering Design Manual (EDM) and its Erosion and Sedimentation Control and Agricultural Mitigation Plan (ESCAMP), among other specifications. National Fuel's construction, maintenance and expansion of natural gas facilities is closely coordinated with local, state, federal and tribal authorities, where appropriate.

“Our team works closely with regulatory agencies throughout a project's lifecycle to preserve biodiversity and reduce ecological impacts. This often includes consideration of potential impacts to sensitive habits and threatened species.”

Alexandra Gould

Environmental Compliance, Engineering Department



Regulatory Review Practices

The impact that both existing and potential environmental regulations may have on our environmental management program are continually reviewed and evaluated. Dedicated groups consisting of members from our environmental team, legal counsel, construction management and executive management meet regularly. These meetings are used to discuss proposed policies and regulations, project-specific compliance conditions and tasks, review monitoring and inspections, and design future action plans. We routinely engage with organizations such as the American Gas Association (AGA), Interstate Natural Gas Association of America (INGAA), Northeast Gas Association (NGA) and the Marcellus Shale Coalition (MSC) to discuss these important industry issues. National Fuel voluntarily commits to many natural gas industry best practices including:

- [INGAA Greenhouse Gas Emissions Commitments](#)
- [INGAA Commitments to Responsible Pipeline Construction](#)
- [INGAA Commitments to Pipeline Security](#)
- [INGAA Commitments to Landowners](#)
- [INGAA Commitment to Pipeline Safety](#)
- Environmental Inspector Guidance Recommended Qualifications and Best Practices

Project Planning and Development

Prior to the commencement of a project, a support request that includes a description of the project's proposed duration, location, purpose, scope and anticipated workspace requirements is submitted to management in the environmental group. An environmental project manager is assigned and evaluates the potential environmental impacts through coordination with consultants, environmental permitting agencies and ecological experts.

These experts specialize in areas that include, but are not limited to, the following:

- [Air/GHG emissions](#);
- Soil and geology;
- Light and noise impacts;
- Spill prevention and response procedures;
- Water resource identification and delineation of aquatic and freshwater (stream and wetland) resources;
- Threatened and endangered species and critical habitats;
- Other vegetation and wildlife impacts;
- Waste generation;
- Aesthetics;
- [Environmental and social justice](#);
- Cultural and historic resource identification; and
- Surveying, routing and siting practices to avoid or minimize impacts to identified resources.

When developing a project, we routinely engage with stakeholders to further refine the project's scope and our plan:

Environmental Regulatory Engagement	Environmental Stakeholder Engagement	Community Outreach and Landowner Engagement
<ul style="list-style-type: none"> • United States Army Corps of Engineers (USACE) • Federal Energy Regulatory Commission (FERC) • United States Fish and Wildlife Service (USFWS) • State Historic Preservation Office (SHPO) • New York State Department of Environmental Conservation (NYSDEC) • New York Natural Heritage Program (NYNHP) • Pennsylvania Department of Environmental Protection (PADEP) • Pennsylvania Fish and Boat Commission (PAF&BC) • Pennsylvania Game Commission, and the Pennsylvania Department of Conservation and Natural Resources (DCNR) 	<ul style="list-style-type: none"> • Early identification and coordination with private, local, tribal, state and federal agencies and stakeholders; • Engagement with applicable ecological experts/agencies to assess potential impacts to stream and wetland resources, cultural and historic resources, threatened and endangered species, and to consider potential storm water or floodplains, civil engineering, and steep slope stabilization/mitigation concerns; and • Engagement in project routing exercises to assist with resource avoidance, impact minimization and development of project-specific alternatives analyses, where practicable. 	<ul style="list-style-type: none"> • Early and regular contact, review, engagement, coordination, negotiation and issue-resolution with affected landowners, tenants, communities and others that may be potentially affected by the proposed project; • Engagement with local tribal and government officials make them aware of the proposed project and to help them address questions from their constituents; • Review of facility locations and safety procedures with emergency responders; • Establishing a National Fuel point of contact for stakeholders to communicate with throughout the life of the project; and • Conducting and participating in public meetings to discuss potential short term and long term environmental and landowner considerations with the public; affected landowners, local, state, and federal authorities; tribal representatives, as well as any other stakeholders.

Land Use in Areas of High Biodiversity and Critical Habitat

The Company's project planning and coordination process involves significant effort to avoid ecologically sensitive areas where threatened and/or endangered species exist or that have high ecological value in terms of species richness or diversity, such as scrub shrub or forested wetlands.

We directly consult with agencies such as the USFWS, NYNHP, PAF&BC, PA Game Commission and PA DCNR to identify ecologically sensitive areas. This may yield critical habitat location information, survey requirements and recommendations for avoidance and impact minimization for species including, but not limited to:

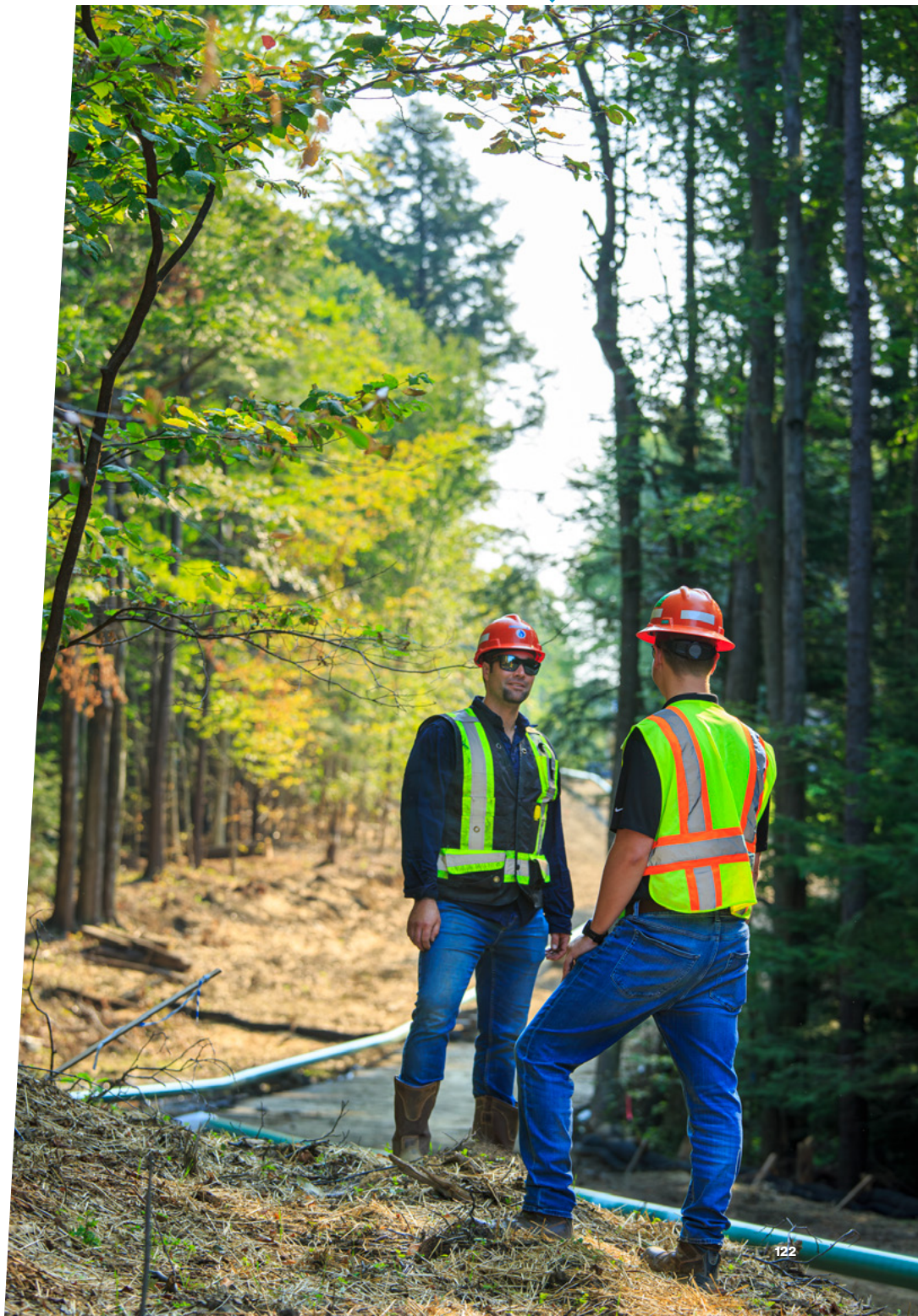
- Northern Long-eared Bat (*Myotis septentrionalis*);
- Indiana Bat (*Myotis sodalis*);
- Timber Rattlesnake (*Crotalus horridus*);
- Northern Riffleshell Clam (*Epioblasma torulosa rangiana*);
- Round hickorynut Mussel (*Obovaria subrotunda*);
- Rabbitsfoot Mussel (*Quadrula cylindrica cylindrica*);
- Rayed Bean Mussel (*Villosa fabalis*);
- Blue-spotted Salamander (*Ambystoma laterale*);
- Log-fern (*Dryopteris celsa*); and
- Monarch butterfly (*Danaus plexippus*).

Effective project scoping, routing and agency consultation are necessary steps aimed to preserve biodiversity. Areas with significant ecological value, such as sole source aquifers, high quality streams and wetlands, are given substantial consideration throughout the planning process. Whenever practicable, impacts to these areas are minimized. If these areas cannot be safely avoided, the environmental team undertakes an enhanced planning process to identify measures that meet or exceed the permitting agency's mitigation standards. Proper implementation, monitoring and completion of these mitigation efforts often spans several years, which we treat as a vital component of the project-closeout process.

Project Construction and Restoration

Pre-Construction

Once the Company performs an initial project screening and identifies any planning issues, the project moves into the pre-construction phase. Initial project screening involves review of desktop resources, submission of applicable agency consultations and permits, as well as the development of Erosion and Sediment (E&S) Control Plans. Permitting agencies review projects and provide specific considerations and permit conditions. Projects may necessitate site-specific erosion and sedimentation control, site restoration and/or post-construction stormwater management plans, which are often developed by third-party environmental consulting firms utilizing applicable local, state and federal codes and guidance, in addition to our internal ESCAMP and EDM. Following the preliminary project coordination and permitting, a pre-construction meeting is held to review and discuss all compliance considerations, plans, agreements, permits and clearances, construction techniques, timelines, as well as restoration expectations. Construction plan implementation, monitoring and remediation procedures are discussed in detail with pertinent internal project management



personnel, general contractors and sub-contractors. National Fuel may also host other pre-construction training for those involved with a project to effectively communicate important environmental permitting information and concerns. A list of individuals who completed the training may be retained onsite, and a project-specific sticker may be distributed at trainings that must be adhered to hard hats.

Construction

Once construction commences, in addition to agency-approved permits and plans, the Company requires full compliance and implementation of applicable environmental management policies and plans developed during pre-construction. At the project site, E&S control devices are installed and signage identifying wetlands, streams, approved access roads and prohibited roads are posted prior to earth disturbance activities. Adherence to the construction sequence is monitored on site by NFG personnel and/or third-party environmental inspectors, and permit binders are kept on site for the entirety of the project. Throughout the duration of construction, E&S control devices are monitored and maintained.

Restoration

Our goal is to establish, strengthen and enhance positive relationships with all project stakeholders. To help accomplish this goal, we pride ourselves on fulfilling commitments made to agency personnel and landowners. This includes restoring resources and property, utilizing native vegetation, to a condition that is as good or better than prior to project commencement. We view landowners as long-term partners with equal and mutual interests. To ensure that landowner concerns are heard and acted upon, our procedures include grievance reporting mechanisms for landowners.

National Fuel monitors the status of vegetation growth and establishment, and performs follow-up inspections, monitoring and reporting to permitting agencies until permit closeout as required by associated earth disturbance permits. Invasive species mitigation, stream/wetland restoration and post-construction stormwater control effectiveness. Project site restoration may enhance existing habitat through special wetland seeding and planting practices or create additional species habitat through proper placement of timber, brush, stone and streambank stabilization techniques to adjacent freshwater resources. For example, in areas where there is potential Timber Rattlesnake habitat, National Fuel creates additional habitat through the proper placement of stone beyond agency or permit requirements.

The Company implements best management practices aimed to restore project sites to pre-construction conditions. This includes grading and topsoil replacement and the restoration of natural contours and drainages. Additionally, excess rock is removed from the top foot of soil in all agricultural fields, pastures and residential areas. Buried rock that is above the top of existing bedrock profile in agricultural lands is also removed. Trash is removed and properly disposed of, and once vegetation regrowth has met or exceeded 80% coverage, E&S controls are removed.

Inspection

Employees and contractor personnel routinely perform project site inspections throughout the duration of the project. National Fuel has established a standardized guidance related to inspection of inactive construction projects and developed a notification system for inspection of active/inactive sites after inclement weather. It is through this inspection, construction management overview, and thorough internal review of these efforts that the Company establishes a project-wide culture of environmental protection, safety, quality and transparency. Our project sites also undergo frequent agency inspections, often unannounced, and we consider these as opportunities to demonstrate our continuous compliance with the respective agency requirements.

Facility Operation

Once construction or maintenance of a pipeline or facility and associated areas have been restored, the project moves into the operational phase. During this phase, routine maintenance, monitoring and audit practices help ensure that the installed facilities remain integrated with the natural environment. National Fuel strives to seed project sites and rights of way (ROW) with pollinator species, creating habitat for migratory bird species, supporting sensitive plant and animal species, and allowing for the proper restoration of valuable wetland and stream resources. Our ROW maintenance practices, pollinator seeding, habitat creation through plantings, and invasive species mitigation efforts help restore areas with native plant species.

Incidents of Non-Compliance with Environmental Permits, Standards and Regulations

For calendar year 2022, National Fuel's Midstream Segment did not receive any notices of violation (NOV) related to its operations.¹ Upon receipt of a NOV, a corrective action plan is put in place to remediate the issue as soon as possible. This plan is continuously discussed with regulatory agencies to ensure effective remediation occurs.

All NOVs are analyzed and actions are implemented to reduce the recurrence of similar issues on National Fuel projects. In addition, "lessons learned" meetings focus on the implementation of proactive measures to avoid future NOVs for similar incidents. These proactive measures address waste, air quality/emissions, water discharges, water withdrawals, effluent limits, wastewater pretreatment requirements, oil or hazardous substance spills, land use and endangered species. Additionally, the measures include:

- Executive-level environmental compliance sponsorship;
- Enhanced agency coordination;
- Development of improved internal environmental inspection management procedures; and
- Enhanced training for project team members, members of the environmental compliance team, management staff and contractor personnel, as appropriate.

National Fuel strives to achieve zero incidents of environmental non-compliance associated with the thousands of construction and maintenance-based field activities undertaken annually by the Company. We believe it is important to use past experiences, both positive and negative, to shape our plans and policies with the goal of zero incidents.

¹ In 2022, the Company received one NOV associated with the sediment deposition along a National Fuel right-of-way caused by an unrelated entity's project activities. The NOV was minor and not a result of National Fuel actions. National Fuel immediately hired a contractor to remediate the issue caused by those unrelated activities and coordinated response with the agency. The NOV was closed almost immediately, with no enforcement action or monetary penalties from the agency.

“To support pollinator and Monarch biodiversity, National Fuel has enrolled in the Monarch Candidate Conservation Agreement with Assurances Program. Through this program the Company performs conservation measures, such as seeding and planting practices, that utilize native and pollinator species while maintaining a suitable habitat through idle lands.”

Dan Young
Senior Environmental Analyst



Restoration Focused on Pollinators

- Planted approximately 70.4 acres of native pollinator seed mixes in 2022.
- Received the Certificate of Inclusion in Nationwide Candidate Conservation Agreement with Assurances (CCAA); 16,000 acres are included as enrolled lands.
- Intent of the CCAA is to enhance and expand available monarch butterfly habitats through conservation measures.
- Our conservation measures include conservation mowing, idle lands and set asides and use of pollinator seed mixes during restoration. In 2022, National Fuel exceeded the target goal of conservation measures within the adapted acres.

Biodiversity Enhancement and Habitat Conservation

The routine restoration and maintenance procedures that our Midstream Segment implements to maintain and protect habitat within our operating area are often supplemented with additional opportunities to further engage with applicable stakeholders to create, conserve or enhance natural areas, or otherwise afford additional ecological protection. Recent examples include:

FM120 Insertion Project

As part of the FM120 Insertion Project, National Fuel inserted a new Flexsteel pipe into approximately 12 miles of the vintage FM120 pipeline, minimizing environmental impact that would have occurred from a greenfield pipeline installation.

- **General Right-of-Way Restoration:** Of the approximately 64 acres temporarily disturbed as a result of the installation of the FM 120 Insertion Project, 100% of this acreage was fully restored prior to the onset of winter months.
- **Pollinator Seed Mixes:** To increase the amount of suitable pollinator habitat along our pipeline corridor, National Fuel consulted with a local seed distributor as well as landowners along the pipeline route to promote the application of a specialized seed mix and the propagation of numerous pollinator plant species such as milkweed and various native wildflowers. Following the FM120 insertion, the Company restored approximately 33 acres using the pollinator mix.

Tamarack Tree Planting

As part of additional work at our Tamarack Compressor Station, National Fuel acquired a temporary workspace from an adjacent landowner. After work was complete, National Fuel conferred with the landowner to plant more than 300 fruiting trees and bushes with species including apple, pear, peach, blueberry and raspberry. The installation of the bushes and trees support not only the local pollinator species, but the local elk population and other native wildlife as well.

Line XN Streambank Stabilization

National Fuel stabilized and reinforced a portion of the eastern stream bank of Ransom Creek, which had eroded into National Fuel's existing Line XN transmission pipeline ROW. The project was completed using best management practices to help lessen impacts to the riparian habitat, and to fish, invertebrate and amphibian species. The impacts were minimized to the greatest extent feasible by reducing in-stream work, reducing workspaces to only those needed for safe construction and by reducing tree clearing to the limited number of trees that allowed for site access and workspace. Approximately 320 native live tree stakes were planted to provide stabilization in combination with various structural features installed. These clippings germinate once placed in soil and will develop into a new tree.

First Fork

National Fuel collaborated with the Potter County Conservation District to create cold water habitat for both stocked and wild brown trout on the First Fork of the Sinnemahoning Creek. Appropriate permits were obtained and site-specific habitat structures were developed. These streambank protection techniques were successful in stabilizing eroded banks and creating fish habitats. The structures created also help deflect current away from a side channel and prevented the creation of a side channel.

Elk State Forest Native Planting

As shown in the table, the Midstream Segment continues to increase the amount of overseed areas to establish native pollinator plants on our existing and fully vegetated ROWs. This is a combined effort with the DCNR to improve habitat and diversity along existing ROWs. DCNR noted an increase in use of the overseeded areas by wildlife and pollinators within Elk State Forest. The Midstream Segment intends to continue to work with DCNR to introduce pollinator mixes along existing vegetated areas of the ROW to promote plant biodiversity.

Elk State Forest Native Planting	2019	2020	2021	2022
Areas overseeded (acres)	2.00	3.28	5.15	5.74
Total Overall Acres Planted	16.17			



Root wad and multi-log vane deflectors were constructed to create trout habitat and holding water in the First Fork of the Sinnemahoning Creek.

Land Owned, Leased or Operated within Areas of Protected Conservation Status or Endangered Species Habitat (acres)

Our Midstream Segment strives to minimize impacts to protected conservation areas and endangered species' habitats, which is accomplished through continuous agency consultation, and thorough analysis of appropriate avoidance, minimization and mitigation measures. The [Environmental Management Policies and Practices](#) portion of this section further discusses the processes our Midstream Segment uses to build, operate and maintain the system while considering the environment and sensitive areas.

The following table shows the percentage of land operated near or within areas environmentally sensitive areas. This includes lands with a protected conservation status or critically endangered species habitat ("Designated Areas"). Although approximately 50% of land that our Midstream Segment owns, leases and operates is near (within 5 kilometers of) a Designated Area, only approximately 2% is within Designated Areas. This reduced percentage is due to our efforts related to project siting, scoping and resource avoidance measures.

	Total Operating Footprint (Acres) ¹	Operating Footprint (Acres) Near Designated Areas ^{2,3}	% of Total	Operating Footprint (Acres) Within Designated Areas ^{2,4}	% of Total
Empire	1,639	1,047	64%	47	3%
Supply	12,730	6,496	51%	205	2%
Midstream Company	1,798	486	27%	0	0%
Total	16,167	8,029	50%	252	2%

Acres Disturbed and Restored

The following table displays the total terrestrial acreage restored by our Midstream Segment as a percentage of impacted area. The acreage of disturbed land was calculated by totaling the acreage associated with projects requiring a state earth disturbance permit in calendar year 2022. If restoration is initiated after October 15, areas are winterized or temporarily restored and stabilized until the seasonal conditions allow for permanent restoration. Permanent restoration is conducted after April 1. National Fuel strives to fully restore project areas within one year of the in-service date. Our ESCAMP is a guide used during construction and restoration unless specific requirements are given by regulatory agencies or landowners. For more discussion on the restoration practices that our Midstream Segment follows, see [Environmental Management Policies and Practices](#) portion of this section.

- 1 Operating Footprint includes acreage that is owned, leased and operated, and excludes land that is owned but not operated. Total acres include a calculation of all Pipeline ROW mileage with an average 50-foot buffer on the pipeline's centerline, as well as a 50 foot buffer of all wells and all station points. Large station acreage is calculated from the actual footprint of the station operation and is defined as area inside the station fencing. Leased storage acreage with no facilities is not included in this analysis. Acreage includes regulated and unregulated gathering pipelines.
- 2 World Database on Protected Areas (WDPA) and Ramsar Wetlands of International Importance data was used to determine areas of protected conservation status. The United States Fish and Wildlife Service Environmental Conservation Online System (USFWS ECOS) was used to analyze land considered to be active proposed and final critical habitat for endangered species. This database was used in lieu of the IUCN Red List of Threatened Species defined in the SASB standard due to USFWS's involvement and review of our Midstream Segment's projects. These datasets were accessed on April 24, 2023.
- 3 Acreage within 5 kilometers of the boundary of lands designated as a protected conservation area or as endangered species habitat.
- 4 Acreage within the boundary of lands designated as a protected conservation area or as endangered species habitat.



Acreage Disturbed and Restored

	Empire	Supply	Midstream Company	Total Midstream Segment
Acres not Permanently Restored from prior years ¹	—	64	120	184
Acres Disturbed in current year	—	579	225	804
Total Acres Impacted	—	644	345	989
Acres Permanently Restored in current year ²	—	224	212	436
% of Impacted Area Temporarily Restored in current year ³	—	65%	39%	56%
% of Impacted Area Permanently Restored in current year	—	35%	61%	44%

Number and Volume of Hydrocarbon Spills

The Midstream Segment works diligently to prevent the occurrence of hydrocarbon spills on projects and at worksites. Specific plans, such as a Spill Prevention and Response Procedures Plan; Spill Prevention, Control and Countermeasure Plan; and an Inadvertent Return plan, are in place, as applicable, to prevent spills from occurring and give guidance on procedures to follow when remediating a spill. In the event a spill or leak occurs, personnel and response teams are quickly notified, the spill is contained and properly remediated to control exposure to the environment, and appropriate agencies and personnel are notified as required by plans, procedures and/or regulations. Spills are remediated according to federal, state and local regulatory requirements. The Midstream Segment did not experience any spills greater than 1 bbl in 2022.

	2020	2021	2022
Number of Spills Greater than 1 bbl ⁴	2	1	0
Total Volume of Spills Reported (bbl)	3.69	3.57	0
Total Volume of Spills Recovered ⁵ (bbl)	3.67	3.39	0
Total Volume of Spills Occurring in the Arctic ⁶	n/a	n/a	n/a
Total Volume of Spills Impacting Unusually Sensitive Resources (bbl) ⁷	2.38	0	0

- Projects requiring state earth disturbance permits were included in this analysis. For New York, this includes projects involving over one acre of earth disturbance (SPDES), and for Pennsylvania, this includes projects over five acres of earth disturbance (ESCGP-3).
- Includes acreage associated with projects that commenced permanent restoration in 2022. This includes initiating permanent restoration on projects that were constructed 2021 that only had temporary restoration completed during that year. Permanent restoration is defined as areas for which final decompaction, grading, topsoil replacement, installation of permanent erosion control structures, lime, fertilization and seeding have been completed, even if monitoring is on-going. Areas where impervious surfaces or stormwater controls have been installed are also considered to be permanently restored.
- If seasonal conditions or other factors did not allow for permanent restoration, the area was temporarily stabilized or winterized until conditions were suitable for permanent restoration, after April 1st.

- A spill is defined as greater than 1bbl (42 U.S. gallons or 159 liters). Spills include those that reached the environment and exclude spills that were contained within impermeable secondary containment.
- The number of spills recovered is the amount of spilled hydrocarbons removed from the environment through short-term spill response activities, excluding amounts that were recovered during longer-term remediation at spill sites and amounts that evaporated, burned, or were dispersed.
- The Midstream Segment does not operate in the Arctic, which is considered to be the area north of the Arctic Circle.
- Unusually Sensitive Areas in the U.S. is characterized using the definition provided by PHMSA.

Operational Safety, Emergency Preparedness and Response

The Company's highest priority is the safety of our customers, employees and the communities we serve. National Fuel has worked diligently to establish a culture that embraces continuous improvement in all aspects of safety.

Safety Management Systems

Our pipeline and facilities are built and maintained to ensure the highest level of safety and reliability for our customers and the communities where we operate. Federal and state pipeline safety codes require that pipeline operators comply with extensive requirements for material quality, design, construction, testing, inspection and operations and maintenance for all facilities. Our Midstream Segment is committed to meeting or exceeding the requirements of all state and federal laws and regulations applicable to the construction and operation of natural gas infrastructure. In carrying out our responsibilities, we perform extensive outreach to stakeholders in or affected by pipeline construction and maintenance activities.

In addition to the Safety Management Systems and Programs explained in the following sections, see [Integrity of Gas Delivery Infrastructure](#) for additional information about our safety management systems and programs, including the Pipeline Safety Management System and extensive safety training and public outreach programs that also apply to the Midstream Segment.

Remote Control Valve Installation

As described by PHMSA, pipelines are the safest, most environmentally friendly, and most efficient and reliable mode of transportation for gas and hazardous liquids.¹ Although rare, pipeline accidents, including ruptures, can occur. To address this risk, our Midstream Segment has implemented an ongoing program to mitigate the potential effects by installing remote control valves ("RCVs") and rupture mitigation valves ("RMVs") to protect higher populated areas. RCVs/RMVs allow for a rapid shutdown of pipeline facilities when an incident has been confirmed. Our Midstream Segment currently has 131 RCVs across our transmission systems with 72 RCVs installed in the past 6 years.

System Modernization

Corrosion, together with manufacturing and construction related defects often associated with early vintage pipelines, are leading causes of significant pipeline incidents. To reduce the risk associated with early vintage pipelines, the Midstream Segment has committed to the ongoing modernization of older bare steel pipelines, especially those pipelines operating at higher pressures in populated areas. Over the past five years, the Midstream Segment has invested more than \$502 million, improving system safety and reliability. This is expected to remain a continued focus for the Company in the years to come.

Supply Corporation placed its FM100 Project into service in December 2021, consisting of approximately 30 miles of coated steel pipeline, modifications and expansion of an existing compressor station, and construction of a new compressor stations and two measurement/regulation stations. Completion of this project allowed for the abandonment of approximately 45 miles of vintage pipeline and an existing, higher-emissions intensity compressor station in 2022.

¹ See PHMSA's regulatory perspective offered related to pipeline safety regulations.

The Midstream Segment has installed and placed into service several composite pipelines in recent years. Use and advancement of composite pipe technology has proven to be a very cost efficient and environmentally friendly means of pipeline upgrade. For example, as part of our Line FM120 Pipeline replacement project, we inserted approximately 18 miles of composite pipe into the existing vintage bare steel pipeline. The construction method of inserting the composite pipe into the existing line in lieu of conventional open trench pipeline replacement construction allowed for reduced earth disturbance, reduced impacts to water resources and reduced capital costs. This insertion project, which took place in 2020 and 2022, also allows for a future abandonment project of approximately 15 miles of 1940's vintage bare steel pipeline.

Leak Patrol and Surveillance

Our Midstream Segment devotes considerable resources to leak patrol and surveillance of its pipelines and facilities. Regular foot and aerial patrols are conducted to look for indications of leakage and to identify any population growth or third-party encroachment activity along our pipeline corridors. Additional patrolling is conducted after severe weather events to evaluate right-of-way conditions for erosion or land subsidence that could impact pipeline integrity or environmental resources. Our Midstream Segment also continues to evaluate and participate in industry projects to assess viability of new technologies that may assist or enhance pipeline right-of-way monitoring through use of satellite imagery and data.

Facility Design and Construction Management

To ensure safety and quality during construction and post-construction facility operations, National Fuel maintains a robust design and construction management program and processes in accordance with, and above the requirements of PHMSA's gas safety regulations. Our program is designed to ensure that the facilities we build will provide safe and reliable service now and for many years into the future.

Facility Design and Construction Management Major Elements

- Engineering Design Manual for steel facilities;
- Engineering Design Approvals Process for new or replacement facilities;
- Construction Inspection Training program for all inspectors;
- Construction Inspector Manual;
- Design and Construction Specifications and Procedures;
- Ensuring quality materials through purchasing from an approved manufacturers list, placing inspectors at manufacturing plant facilities and conducting factory acceptance testing of critical highly engineered manufactured equipment;
- All Steel Transmission Facility Inspectors Certified to API 1169;
- American Weld Society Certified Welding Inspection ("CWI") training and certification for select individuals;
- North American Corrosion Engineers (NACE) certified Coating Inspector Program ("CIP") for select individuals;
- Design and testing protocols for remote control valve installations;
- Construction Quality Management System including internal construction audits and lessons learned process for continuous improvement;
- Periodic audits of radiography and other non-destructive examination procedures and results by third parties;
- Geohazard analysis and mitigation measures implemented during design and construction phases for new transmission facilities in landslide prone areas. Consultants with civil engineering and geotechnical expertise are under contract to provide these services for initial design as well as for post construction short notice "on-call" mitigation;
- Pre-construction planning checklist to ensure personnel qualifications and adherence to project specific commissioning and abandonment plan; and
- Comprehensive commissioning and start-up procedures.

Engineering Design and Approval Process

National Fuel utilizes an engineering design and approval process to ensure the design of pipelines and facilities meet or exceed PHMSA's gas safety regulations and all applicable standards to provide a high level of safety to the public, contractors and employees. This process involves a detailed review and approval of project engineering designs, specifications and material procurement by subject matter experts, yielding compliant and safe designs that provide safe and reliable service for decades.

Construction Quality Management System

Our Construction Quality Management System (CQMS) helps to ensure that any new high pressure steel facilities will be designed, constructed and commissioned such that, collectively, they provide a safe, reliable and long-lasting delivery system of natural gas. Our CQMS plan is comprised of several key elements:

Internal Construction Audits/Assessments

Our CQMS plan defines a targeted percentage of jobs to assess and a targeted frequency of assessments per selected project. These assessments are performed by immediate project staff as well as by staff who are not involved in the project. Assessments evaluate construction compliance with Company specifications and procedures. If a non-compliance is observed during an assessment, it is typically remediated at the time of discovery, or if it cannot be remediated immediately, reported for further evaluation using the Non-conformance Reporting process.



Non-Conformance Reporting

Project staff report instances of non-conformance to the quality team for further evaluation. A non-conformance may be (1) a deviation from a specification or procedure and is typically found after construction or cannot be “immediately” corrected, or (2) a deviation from specification or procedure that is deemed acceptable using sound engineering judgement and an appropriate approval process.

Quality Moment Distribution

The quality team identifies, compiles and distributes summaries of certain unique construction instances or issues to a group of internal engineering, operation and construction personnel. This shares knowledge and experiences to a larger audience, who otherwise may not have heard of or learned from these experiences.

Continual Improvement and Lessons Learned Review

Non-conformances and exceptions or deviations from Company processes and procedures are analyzed and reviewed throughout construction so that appropriate remedial actions can be implemented prior to a job going in service. In addition, these instances are also reviewed collectively on an annual basis after they have been effectively remediated. This annual review is used to identify quality trends and develop continual improvement measures which may include revising company procedures, updating or expanding training for engineering and construction personnel, or updating the CQMS plan to address specific needs.

Senior Management Summary

Annually, the results of the CQMS Program are summarized and provided to the Midstream Segment’s senior management. This annual summary and review process allows senior management to provide leadership feedback to the CQMS team to continue to improve the effectiveness of the program.

Together, the elements of the CQMS plan ensure facilities are constructed to meet our internal specifications and regulatory requirements while also establishing a process to measure, analyze and report results for relevant projects, document the results of this process in a “lessons learned” format, and ultimately implement appropriate changes as part of a continuous improvement program.

Transmission Integrity Management Program

The integrity of Midstream and Downstream transmission pipelines is maintained under a comprehensive Transmission Pipeline Integrity Management Program and Plan (TIMP) that was developed in accordance with the requirements of the PHMSA Integrity Management Rule, in 49 CFR Part 192 Subpart O – Pipeline Integrity Management.

The Integrity Management Rule specifies how transmission pipeline operators must identify, prioritize, assess and evaluate risk, and mitigate threats to validate the integrity of gas transmission pipelines in High Consequence Areas (HCAs) and Moderate Consequence Areas (MCAs).

The National Fuel TIMP Plan includes elements and comprehensive procedures which ensure a consistent and thorough approach to identifying and managing threats of concern (TOCs) to the transmission pipeline system (i.e. corrosion, excavation damage, other outside force damage, natural force damage, pipe, weld or joint failure, equipment failure or incorrect operation).

TIMP Program Major Elements

- | | |
|---|---|
| <ul style="list-style-type: none"> • Defined Roles and Responsibilities; • High Consequence Area Identification; • Threat Identification Process; • Risk Analysis and Prioritization; • Assessment Method Selection; • Baseline Assessment Plan and Schedule; • Procedures for Conducting Assessments; | <ul style="list-style-type: none"> • Remediation of Threats; • Preventive and Mitigative Measures; • Continual Evaluation and Reassessment; • Management of Change; • Performance Measurement; and • Quality Assurance. |
|---|---|

Under the TIMP Plan, our Downstream and Midstream Segments perform regular integrity assessments on over 1,384 kilometers of transmission pipelines, which include 372 kilometers of HCAs and cover over 92% of the population living, working or congregating within the area potentially impacted by an incident on our pipelines. These assessments are generally conducted every 7 years or less using one of the following inspection methods:

In-Line Inspection (“ILI”)

Uses electronic inspection tools called “smart pigs” that are propelled through the line using gas pressure, air pressure, a column of fluid or sometimes robotic propulsion. The sensors on the smart pig can detect wall thickness, dents, internal and external metal loss, cracks and crack like features, and certain manufacturing defects.

Pressure Test

Generally uses pressurized water for safety (i.e. hydrotest). During a hydrotest, the pipeline is taken out of service, cleaned and filled with water, which is then pressurized to a minimum 1.5 times the maximum allowable operating pressure of the pipeline for a period of at least 8 hours.



Direct Assessment

Uses specialized tools to identify potential coating defects that could result in corrosion, which are then excavated, examined and repaired as required.

Based on assessment results, any discovered anomalies that impact the integrity of the pipeline are repaired or replaced. When the assessment is complete, the results are analyzed to determine if any identified threats may be present in other areas of the pipeline within or outside of the HCAs, and if so, additional preventive and mitigative measures, such as additional cathodic protection, installation of line markers, increased patrolling or more frequent assessments, may be implemented to reduce the risk and to ensure the integrity of the pipeline into the future.

Emergency Response and Preparedness

National Fuel is committed to effective emergency response to minimize the impacts to our employees, contractors, customers and the public in the event of an emergency. We regularly conduct emergency response tabletops and drills involving field operations employees, gas control and management to practice and assess our emergency response procedures and capabilities. We also perform outreach to local first responders to provide information on our facilities and discuss coordination that will be necessary in the event of an emergency. National Fuel has dedicated Emergency Response Coordinators who assist with conducting these drills and facilitating communication with local, county and state emergency responders.

Industry Focused on Safety with Respect to Energy Transition

The Pipeline & Storage business adheres to INGAA's guiding principles for pipeline safety. Recently, INGAA made further enhancements to their industry safety initiatives through the IMCI program, which focuses on building a foundation for pipelines to safely support the energy transition as the industry moves in the direction of a net zero economy. This includes a continued focus on the safety and integrity of existing gas transmission systems, as well as efforts to ensure reliability and resilience for next generation fuels.

Keeping Pace with Changing Technology

As National Fuel strives to continuously improve pipeline safety, our Integrity Management Program has been an important tool for validating our pipeline network's fitness for service. Fundamental to an Integrity Management Program is the understanding of how various threats of concern can impact a facility and how to appropriately assess for these threats and gauge their seriousness. The most useful means of assessing threats are through use of ILI, a program that has grown significantly since ILI tools were first utilized by the company in the late 1980's.

To date, the Company has expanded its use of this technology beyond traditional magnetic flux leakage and deformation tools to include the use of ultrasonic technology, hard spot detection, and inertial measurement units, with the first EMAT crack detection technology completed during the 2023 assessment campaign. These ILI technologies allow National Fuel to understand the extent of and appropriately react to the threats of corrosion, manufacturing or construction defects, dents and other deformations, crack-like features, or land slips and other outside forces. Since 2021, National Fuel has completed two robotic ILI assessments of pipelines in high consequence areas (HCAs). Based on these successful experiences, National Fuel expects to expand the use of this technology to other sections of pipeline that were previously unavailable for in-line inspection.

In addition to a robust ILI program, National Fuel has expanded its long-standing Existing Facility Analysis program, which includes laboratory analysis to determine material properties of pipe samples collected from pipe replacement projects to the use of non-destructive in-situ material testing of in-service pipelines using the latest industry technology. Material property information is used to ensure that a given facility can safely operate at its maximum allowable operating pressure. In 2022, National Fuel completed 67 material tests (both destructive and in-situ) allowing 58 kilometers of pipeline with previous material properties to be accurately attributed.

The efforts that National Fuel has made to enhance its Integrity Management Program has allowed the Company to gain a better understanding of the overall health of our pipeline network and improve confidence in the condition of our facilities.

Regulatory Focus

Our Midstream Segment remains focused on developing the procedures and compliance programs necessary to fully comply with new regulatory requirements and enhance the safety of our pipeline system. In addition to tracking and implementing new regulatory requirements from PHMSA, in 2020, National Fuel enhanced its existing pipeline safety compliance focus through the creation of a Regulatory Compliance Assurance Program (RCAP), comprised of a cross-departmental team of subject matter experts. The RCAP team has developed a compliance program framework that identifies and implements proactive measures to minimize risk of non-compliance and potential regulatory enforcement actions. In its first two years, the RCAP has centered its review and analysis on recent PHMSA enforcement actions, including assessing our current internal processes and procedures, and developing feedback loops and compliance memoranda to continually improve our pipeline safety compliance assurance.

Recently Enacted PHMSA Pipeline Safety Regulations	Proposed New PHMSA Regulations with Potential to Impact
<p>Mega Rule Part 1</p> <p>Safety of Gas Transmission Pipelines</p> <p>Requiring MAOP reconfirmation, expansion of assessment requirements to locations outside of HCAs, and verification of pipeline material properties and attributes, for certain pipelines in higher populated areas.</p>	<p>Gas Pipeline Leak Detection Rule</p> <p>Establishing minimum performance standards for leak detection and repair to ensure public safety and protection of the environment.</p>
<p>Mega Rule Part 2</p> <p>Focusing on repair criteria in HCAs and the creation of new repair criteria for non-HCAs, requirements for inspecting pipelines following extreme events, updates to pipeline corrosion control requirements, codification of a management of change process, and clarification of certain other integrity management and assessment requirements.</p>	<p>Class Location Rule</p> <p>Establishing alternative requirements operators could use, based on implementing integrity management principles and pipe eligibility criteria to manage certain pipeline segments where class location has changed from a Class 1 to Class 3.</p>
<p>Mega Rule Part 3</p> <p>Safety of Gas Gathering Pipelines</p> <p>Establishes new regulated Type C and Type R Gathering Line classifications; requirements for leak survey, cathodic protection and safety related condition reporting for Type C lines; and new reporting requirements for Type R gathering lines.</p>	<p>Pipeline Operational Status Rule</p> <p>Establishing clarification of terms relating to the operational status of pipelines to allow operators to use categories other than the two current options of fully active or abandoned.</p>
<p>Valve Rule</p> <p>Valve Installation Requirement and Minimum Rupture Detection Standards</p> <p>Requires installation of rupture mitigation valves (RMVs) on certain new and replaced pipelines, new rupture detection, notification and response criteria, and new risk assessment requirements related to RMV installation.</p>	

Underground Storage Integrity

National Fuel developed the first underground natural gas storage facility in the U.S. in 1916. As an operator of 29 storage fields with over 100 years of experience, Supply Corporation has a proven track record for safely operating our storage assets. Storage well integrity has always been an important aspect of our operating and maintenance program for storage fields. In 2018, Supply Corporation further enhanced its long-standing storage integrity program with the development of a comprehensive Storage Integrity Management Program (“STIMP”), which complies with the PHMSA Safety of Underground Natural Gas Facilities Final Rule published in February 2020, and with API Recommended Practice 1171, as required by 49 CFR §192.12 – Underground Natural Gas Storage Facilities. As of 2021, National Fuel completed baseline risk assessments on all 29 storage fields, 6 years ahead of the mandated PHMSA deadline.

STIMP Plan Major Elements

- Annual wellhead and wellsite inspections to identify existing or potential hazards and encroachments in the vicinity of surface facilities;
- Annual functional testing of master gate and pipeline isolation valves to verify isolation capability;
- Storage inventory verification performed on several storage fields each year using a third-party consultant;
- Casing integrity inspections using wireline tools;
- Identification and evaluation of corrosion impacts of wellbore or pipeline fluids or solids;
- Annual plugged and abandoned well inspections within the storage boundary and buffer;
- Weekly indicator well inspections to monitor reservoir pressures;
- Monthly storage well site inspections of surface facilities to identify and repair leaks, evaluate integrity and monitor well head pressures; and
- Periodic storage integrity meetings with a multifunctional group representing Gas Storage, Operations, Design and Integrity Engineering, Corrosion, and Gas Control to review system operations, risk assessment results and scheduled remediation or other storage field work to ensure the work is coordinated between the various groups.

A large part of the STIMP involves inspecting the integrity of the metal casings that contains the storage pressure within the wellbore. This is accomplished by running a high-resolution logging wireline tool down the wellbore to provide important information about the well. The wireline tool can detect metal loss and the geometry of the anomaly, which are used to calculate the remaining strength of the casing and to help determine if any remedial work will be required.

Supply Corporation has been running electronic logging tools to inspect storage well casing integrity since the early 1970’s. The program currently targets running 75 casing integrity logs each fiscal year. Through 2021, over 92% of our active storage wells had modern casing inspection logs, with inspection of practically all of our storage wells scheduled to be completed by 2027.

National Fuel is also playing an active role with the underground storage industry and regulatory agencies with respect to revisions to API Recommended Practice 1171 Functional Integrity of Natural Gas Storage in Depleted Hydrocarbon Reservoirs and Aquifer Reservoirs, which is the basis for regulatory requirements for underground storage safety.

Underground Storage Facility Attributes and Casing Inspections (2020 - 2022)

Fields Operated	Capacity (Top gas) Bcf	Wells Operated	Casing Inspections		
			2020	2021	2022
29	81.8	1,161	78	80	83

Planned Changes to the STIMP

Midstream Segment has begun to modernize the annual storage well and plugged and abandoned well inspections leveraging Geographic Information System (GIS) technology. The Company anticipates updating both inspections with a cell phone application that alerts the Company's Storage Group with pertinent time sensitive information. These updates are expected to decrease the necessary manhours to complete well inspections and improve the risk assessment process.

Well Plugging and Decommissioning Program

The Well Plugging and Decommissioning Program is an extension of the Underground Storage Integrity Program. Storage wells that are deemed to have higher risk due to high casing metal loss down-hole, or have other integrity related concerns, are either reconditioned or plugged and abandoned. The plugging and abandonment of a storage well involves sealing the wellbore permanently with cement to prevent the release of gas from the storage reservoir rock to the surface. Additionally, plugged and abandoned wells existing within the storage field boundaries are inspected annually for leaks from the storage formation to the surface. If a leak is identified, the old plugs will be drilled out to bottom and re-plugged to surface.

Since 2017, Supply Corporation has plugged and abandoned a total of 35 wells. The Well Plugging and Decommissioning Program continues to reduce the overall risk of underground storage fields and as a result has made Supply Corporation's storage system safer for our employees and the public.

Well Plugging and Decommissioning Program Statistics (2017 – 2022)

	2017	2018	2019	2020	2021	2022
Plugged wells due to integrity related concerns	8	5	6	8	1	7

Reportable Pipeline Incidents

Our Midstream Segment places a high priority on having a rapid response to emergencies and a thorough investigation of incidents once onsite. When investigating pipeline emergencies and incidents, our Midstream Segment utilizes a comprehensive Root Cause Analysis (RCA) process, which is further described in [Integrity of Gas Delivery Infrastructure](#). The following table summarizes the number of PHMSA Reportable Pipeline Incidents, Corrective Action Orders and Notices of Probable Violation for our Midstream Segment initiated during the period 2020 through 2022.

Midstream Segment Incident and Compliance Summary

	2020	2021	2022
Reportable Onshore Gas Transmission Pipeline Incidents ¹	0	0	2
% Significant Onshore Gas Transmission Pipeline Incidents ²	0	0	50% ³
Corrective Action Order Cases Initiated	0	0	0
Notices of Probable Violation Cases Initiated	0	1 ⁴	0

- Reportable is defined as an event that involves a release of gas from a pipeline, or of liquefied natural gas, liquefied petroleum gas, refrigerant gas, or gas from a Liquefied Natural Gas (LNG) facility, and that results in one or more of the following consequences: (1) a death or personal injury necessitating in-patient hospitalization, (2) estimated property damage of \$50,000 U.S. dollars or more, including loss to the operator and others, or both, but excluding cost of gas lost, or (3) unintentional estimated gas loss of three million cubic feet or more. Additionally, any event that results in an emergency shutdown of an LNG facility, activation of an emergency shutdown system for reasons other than an actual emergency does not constitute an incident, or an event that is significant in the judgment of the operator, even though it did not meet the criteria of the above paragraphs of this definition.
- Significant is defined as an accident or incident that resulted in (1) fatality or injury requiring in-patient hospitalization, (2) \$50,000 or more in total costs, measured in 1984 U.S. dollars, (3) highly volatile liquid releases of 5 bbls or more or other liquid releases of 50 barrels or more, or (4) liquid releases resulting in an unintentional fire or explosion.
- Incident related to compressor station failure of vent stack assembly, which caused station building damage in excess of \$50,000 threshold. There were no fatalities or injuries as a result of the event.
- Case was closed out with no penalty assessed due to remedial actions taken.

Midstream Segment Transmission Pipeline Inspection¹

Our Midstream Segment's transmission pipelines are operated under the National Fuel Gas Company Transmission Pipeline Integrity Management Program.

	2020	2021	2022
Transmission Pipelines (Kilometers)	3,097	3,145	3,094
Pipelines Inspected (Kilometers) ²	110	160	364
% of Pipelines Inspected	3.6%	5.1%	11.8%

Activity Metrics

	Natural Gas Throughput (MMcf)	Regulated Pipelines (Kilometers)	Total Pipelines (Kilometers)	Compression Horsepower
Empire	225,616	434	434	74,074
Supply	550,044	2,735	3,462	186,963
Midstream Company	426,265	504	562	121,360
Midstream Segment ³	1,201,925	3,673	4,458	382,397

1 PHMSA 2022 Gas Transmission and Gathering Annual Report for the Midstream subsidiaries. The Pipeline Inspected Length and Percentage may count the same mileage twice in limited instances where a different inspection method is utilized on the same segment of pipe, in the same year, to inspect for multiple threats.

2 Annual pipeline mileage inspected is determined by a risk based assessment plan and schedule and may vary on an annual basis due to the number of projects, assessment method utilized, and pipeline lengths scheduled for assessment in a given year.

3 Total values between charts may vary slightly due to conventional rounding.



Upstream



SAFE. RELIABLE. AFFORDABLE. SUSTAINABLE.



For more than 100 years Seneca has been operating in Pennsylvania, continuously improving and implementing innovative technologies and processes to reduce emissions and drive long-term sustainability. Our operations are a notable example of how hydrocarbons and renewables can work together to deliver clean, reliable, low-cost energy.



Justin Loweth
 President of Seneca Resources Company, LLC
 President of National Fuel Gas Midstream Company, LLC



Business Transactions Impacting Disclosures

On June 30, 2022, the Company completed the sale of its California properties, which were largely focused on oil production. The divestiture of these assets further focuses the Company's exploration and production operations on its highly economic Appalachian natural gas development program. Prior year metrics have been restated to exclude our California operations.

Achievement of Responsible Natural Gas Production Certifications

Seneca has a long history of environmental stewardship, safety, innovation, transparency and community involvement. Seneca has pursued responsibly sourced gas designations to differentiate our production and provide independent, credible verification of our ESG related policies, procedures and practices.

Equitable Origin Certification



In December 2021, Seneca achieved certification of 100% of its Appalachian production, over 1 billion cubic feet of daily gross production, under Equitable Origin's EO100™ Standard for Responsible Energy Development, a series of rigorous ESG performance targets.

The EO100™ Standard for Responsible Energy Development includes five principles that encompass the entire spectrum of ESG:

- Corporate Governance, Transparency and Ethics;
- Human Rights, Social Impact and Community Development;
- Indigenous People's Rights;
- Fair Labor and Working Conditions; and
- Climate Change, Biodiversity and Environment.

In 2022, Seneca successfully completed the annual re-verification process, which is required to maintain Equitable Origin certification. Seneca demonstrated continuous improvement under each of the five principles and was identified as an industry leader in many areas.

MiQ Methane Emissions Performance Certification



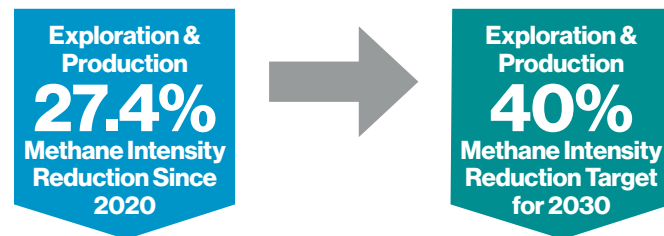
In August 2022, Seneca achieved certification of 100% of its Appalachian natural gas production under the MiQ Standard for Methane Emissions Performance at the highest certification level, an "A" grade. The MiQ Standard is an independent framework for assessing methane emissions and practices for oil and gas facilities. It is a credible way to differentiate natural gas production based on methane emissions. The standard scores production, using an A – F letter grade, and is based on how well operators deploy integrated technologies to detect, measure and abate emissions. It also includes a detailed assessment of policies and work practices that evaluate an operator's preparedness to prevent future methane emissions.

Greenhouse Gas Emissions

Making Progress Towards Our Targets

Our Upstream Segment is committed to reducing methane emissions and continues to develop best-in-class emissions controls to reduce the methane intensity of our operations. We have set a target of 40% reduction in methane intensity from our baseline 2020 year. We continue making significant progress towards our target by implementing a natural gas pneumatics replacement program, applying best practices to reduce venting throughout our operations and by leveraging our Sustainable Development Team to implement innovative ways to minimize emissions.

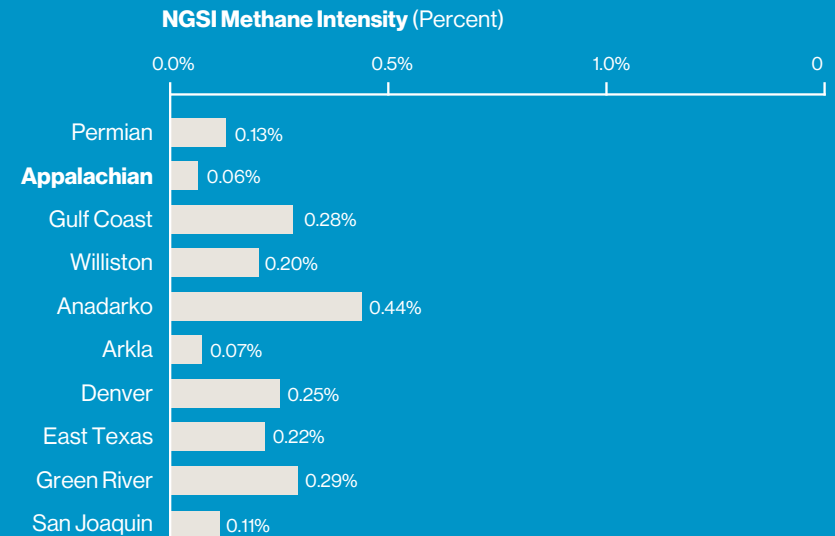
Progress Towards 2030 Methane Emissions Intensity Targets (2020 Baseline)



Additionally, Seneca's 2022 NGSI Appalachia Production Sector methane intensity of 0.063%, which includes additional non-EPA sources, was substantially lower than the One Future goal of 0.283% and the reported 2021 weighted average Production Sector methane intensity rate of 0.152%.

Seneca's ability to develop low-cost and low-emissions intensity natural gas reserves in the Appalachian basin illustrates the sustainability of our operations and positions Seneca well for the future.

Methane Intensity of Appalachia vs. Other Top U.S. Production Basins¹



Seneca operates in the Appalachian basin, which boasts the lowest methane intensity among the top U.S. production basins.

Seneca's NGSI Methane Intensity is in line with the basin average, demonstrating the success of our emission reduction efforts.

¹ Benchmarking Methane and Other GHG Emissions of Oil & Natural Gas Production in the United States – May 2023. Basins are ranked in descending order of hydrocarbon production (BOE). Available at <https://www.catf.us/resource/benchmarking-methane-and-other-ghg-emissions-oil-natural-gas-production-united-states/>.

Applying Emission Reduction Techniques in Operations

Front-End Engineering Design

Seneca recognizes the importance of mitigating emissions in our operations and utilizes front-end engineering in the design of new pads to incorporate techniques that minimize the venting of emissions. The following design components are considered at new facilities:

- Electric and/or compressed air actuated pneumatics are used instead of natural gas pneumatics;
- Equipment footprint is reviewed and minimized through bulk/test design to minimize maintenance venting and eliminate connections that have the potential to leak;
- Artificial lift equipment in the form of plunger lift lubricators are installed as part of new wellheads; and
- Ultrasonic leak detectors and Lower Explosive Limit (LEL) gas detectors are installed to detect methane emissions. The detectors provide an alarm and shut-in the pad so that appropriate investigation can be performed to ensure the area is safe and any identified leaks can be remediated.

Operational Practices

Seneca has implemented best operational practices and training to mitigate emissions. These include practices for routine operation inspection, identification and repair of leaks; unloading practices; and equipment operating condition inspections. These practices were externally audited as part of our MiQ certification, demonstrating we are operating at, or beyond, industry best practices. Seneca also expanded its Leak Detection and Repair (LDAR) program in 2022 to complete quarterly optical gas imaging inspections of well pads and facilities to further mitigate methane leaks. Trained in-house personnel perform these inspections.

Seneca successfully completed a “ventless flowback” trial using a series of check valves and blanket gas to operate the separator. This technique eliminated the initial venting that takes place at the gas buster and allowed the wells to flow straight through the separator to sales. This innovative approach was proposed by our field team and exemplifies the operational best practices we strive to implement.

Voluntary Initiatives

Recognizing the importance of emission reduction efforts and knowledge sharing, Seneca has been an active member of numerous voluntary emission reduction programs for several years. Seneca views these commitments as an opportunity to demonstrate the best practices we have implemented in our operations to mitigate emissions. The following table shows Seneca’s ongoing emissions reduction initiatives.

Ongoing Emissions Reductions Initiatives

Emissions Reduction Program	Commitments/Initiatives
 <p>(member since 2018)</p>	<p>Committed to various EPA-approved best management practices related to:</p> <ul style="list-style-type: none"> • Pneumatic controllers • Fixed roof, atmospheric hydrocarbon tanks • Replacing rod packing vents for reciprocating compressors
 <p>(member since 2018)</p>	<p>Committed to:</p> <ul style="list-style-type: none"> • Implementing best practices to minimize emissions associated with removal of liquids that, as a well ages, can build up and restrict gas flow • Implementing LDAR surveys, as well as timely repair on all active assets • Replacing, removing or retrofitting high-bleed pneumatic controllers
 <p>(member since 2021)</p>	<p>Committed to voluntarily reduce methane emissions across the natural gas value chain to 1% (or less) by 2025</p>
 <p>(sponsor since 2021)</p>	<p>Initiative to work with diverse stakeholders to determine protocols for creation of a measurement informed inventory utilizing the latest emission quantification technologies</p>
<p>Other Seneca Emissions Controls</p>	<p>Control measures in place for combustion and non-combustion equipment to abate and/or to mitigate methane emissions:</p> <ul style="list-style-type: none"> • Use of bi-fuel drilling rigs, completion equipment and fleet vehicles • State-of-the-art catalytic converters for engines • Ultra-low-emissions burners for heater treaters and steam generators • Installation of compressed air systems for pneumatics • Utilization of no/low bleed pneumatic controls/actuators • Use of capture and recovery systems for glycol dehydrators and tanks • Testing and repair of pressure safety valves • Implementation of artificial lift • Utilization of EPA-approved reporting on well pad equipment design to bulk/test versus single well separators



Seneca expanded the frequency of its Leak Detection and Repair (LDAR) program in 2022 to complete quarterly optical gas imaging inspections of well pads and facilities to further mitigate methane leaks. Trained in-house personnel perform these inspections.

Continuous Growth and Improvement

Seneca continues to evaluate its emission profile and implements targeted approaches to reduce and mitigate large source contributors of emissions. These targets are shared throughout the organization from executive goals to employee goals, and in 2022 focused on the following areas:

- Natural gas pneumatic replacement and retrofits;
- Installation of plunger systems; and
- Facility-scale monitoring for methane detection.

Replacement and retrofits of natural gas pneumatics has led to a 24% reduction in this source category for methane emissions. In addition to reduction, Seneca has made it a design criterion that new facility designs incorporate non-natural gas pneumatics, providing avoidance of methane emissions.

New Technologies

We continue to evaluate and pilot various technologies to determine the most sustainable methods for emissions reduction. The following highlights some of the recent technologies Seneca has piloted:

- In November 2021, Seneca installed continuous emissions monitors on three well pads, which continue to be utilized. These devices monitor, measure and record methane emissions.
- In 2022, we commenced quarterly facility-scale monitoring of 100% of our assets. Aerial Light Detection and Ranging (LiDAR) and drone monitoring technologies were piloted to assist in leak identification and pilot quantification techniques. Seneca plans to continue trialing various aerial technologies for leak identification and quantification in 2023.
- Seneca transitioned a pad to solar powered pneumatics to pilot the use and reliability of solar power within the Appalachian basin. This is a zero emissions pad during optimal conditions and has allowed Seneca to expand our knowledge of how solar power may be utilized in future applications.



Seneca's Operations Team continues to pilot techniques with portable cross-compression equipment on well pads that require maintenance blowdowns and/or unloading. During these pilots, Seneca has been testing the ability of these systems to reduce venting during maintenance and/or unloading operations. These pilots demonstrate how Seneca is actively engaging in technology deployment to continue to find solutions that result in the minimization of emissions.

Additionally, the mitigation technologies we've deployed are aimed at reducing Seneca's overall carbon dioxide, methane and nitrous oxide emissions.

Scope 1 Methane Emissions (Metrics Tons CH ₄ as CO ₂ e)	2020	2021	2022
EPA Mandatory Reporting Sources ²	159,109	158,700	130,665
Other Sources ³	407	447	455
Total	159,516	159,147	131,120

Scope 1 Greenhouse Gas Emissions (Metric Tons CO ₂ e) ¹	2020	2021	2022
EPA Mandatory Reporting Sources ²	229,950	247,575	227,046
Other Sources ³	29,607	18,537	17,973
Total	259,557	266,112	245,019

Scope 2 Greenhouse Gas Emissions (Metric Tons CO₂e)⁴

2020	2021	2022
430	404	463

- CO₂e values calculated in accordance with the published 100-year time horizon global warming potential (GWP) values from the IPCC Fifth Assessment Report (AR5, 2014) as preferred by SASB.
- Emissions as reported under EPA GHG Reporting Rule Subpart W, with the exception of the source category "Well Venting for Liquids Unloading," which utilized the Pennsylvania Unconventional Natural Gas Emission Inventory.
- Other Sources include sources identified under NGLSI, fleet, office and small sources that do not meet EPA Subpart W Reporting requirements. Office emissions Included In the Other Sources Category were restated for a unit change.
- Scope 2 represents emissions associated with purchased electricity. In 2023, EPA released 2021 egrid factors that were utilized in the 2022 calculation for purchased electricity.



Absolute methane emissions were reduced by 17.6% as compared to 2021 while production increased by 8.4%.

Controlling Vented Emissions

Seneca has made significant progress in reducing vented emissions. As Seneca explores techniques to mitigate vented emissions through elimination of the source, avoidance and capture, it may be necessary as a form of control on a temporary basis to flare these otherwise vented quantities. This form of control and temporary flaring meets the definition of non-routine flaring. The World Bank's Global Gas Flaring Reduction Partnership defines the types of gas flaring as follows:

- **Routine Flaring** – flaring during normal production operations in the absence of sufficient facilities or amenable geology to re-inject the produced gas, utilize it on-site or dispatch it to a market.
- **Non-Routine Flaring** – flaring that is typically intermittent and short in duration that does not meet the definition of routine flaring.

Seneca implements comprehensive planning techniques to ensure that stationary facilities and pipelines are available when the wells are brought online to further minimize the need to flare.

Flared Hydrocarbons, Other Combustion, Process Emissions, Other Vented Emissions, and Fugitive Emissions (Metric Tons CO₂e)

	2020	2021	2022
Flared Hydrocarbons ¹	895	63	761
Other Combustion (Combustion Equipment, Compressors, Fleet, Office)	97,909	105,934	112,222
Process Emissions (Dehydration)	4,525	2,407	2,276
Other Vented Emissions (NG Pneumatics, Well Venting for Liquid Unloading, Storage Tanks, Well Testing, Venting from Completions and Workovers, NGS Sources)	151,507	153,404	126,783
Fugitive Emissions	4,721	4,304	2,977
Total	259,557	266,112	245,019

¹ To mitigate vented emissions, Seneca has utilized a temporary non-routine flare to combust methane rather than venting. The emissions associated with this form of controlling vented methane is accounted for under the Flare category.

Seneca does not perform any routine flaring as defined by the World Bank.



Air Quality

Criteria Pollutants (Metric Tons) - NO_x, SO_x, Volatile Organic Compounds (VOCs) and Particulate Matter (PM10)^{1,2}

Our Upstream Segment looks for mechanisms to reduce criteria emissions. In 2022, Seneca saw an increase in most criteria pollutants, which was attributable to its increased completions activity and lack of field gas for diesel substitution. During future completions operations, we intend to maximize the substitution of diesel fuel with field gas when bi-fuel equipment is utilized. We are beginning the transition to electric frac equipment with power supplied by natural gas generators, which should result in a decrease in criteria pollutant emissions. For stationary engines, Seneca maintains emissions source testing and screening programs to ensure engines are meeting permit and regulatory thresholds for emissions.

Seneca Criteria Pollutant Emissions (Metric Tons)³

	2020	2021	2022
CO	97.58	121.02	138.85
NO _x	334.37	456.86	503.58
PM-10	14.07	14.77	16.25
SO _x	0.62	0.81	0.82
VOCs	41.78	48.93	49.04

- 1 With respect to Appalachia, data is per PA DEP Air Emissions Report under 25 Pa. Code § 135.3. Appalachia criteria emissions include stationary engines, flares, tanks, dehydrators, reboilers/heaters, pneumatics, venting and blowdowns, fugitives, completions and drill rigs.
- 2 Methods utilized for calculation are based on MSC Guidelines for PA DEP Air Emissions Inventory and generally recognized and accepted standards for emission calculation of stationary engines and heaters.
- 3 2020 and 2021 have been restated to remove emissions associated with California operations, which were divested in 2022.

Air Quality Practices

Seneca has a robust air quality control, management and improvement program, with dedicated resources available to ensure that controls are in place and monitored to ensure best practices in air quality management.

As part of our air quality practices, various plans have been created and are available to assist in defining the myriad of air quality requirements, as well as the methods utilized and implemented to comply with applicable requirements, to ensure quality control of procedures and data collection, and to review for improvement. This includes Seneca's GHG Monitoring Plan, which establishes procedures for accurate monitoring and reporting of GHGs in accordance with 40 CFR §98.3(g)(5) and 17 CCR §95105(c), as applicable. Specifically, the plan identifies the following items:

- Identification of positions of responsibility (i.e., job titles) for collection of the emissions data;
- Explanation of the processes and methods used to collect the necessary data for the GHG calculations; and
- Description of the procedures and methods used for quality assurance, maintenance and repair of all continuous monitoring system, flow meters and other instrumentation to provide data for the GHGs reported.

Additionally, in connection with Seneca's full LDAR program, Seneca follows a LDAR Monitoring Plan, which defines the requirements for our LDAR program, detailed procedures on how LDAR surveys will be conducted, and the process for leak identification and repair.

Highland Field Services

Highland Field Services, LLC (“HFS” or “Highland”), a subsidiary of Seneca, was established in 2015 to address the water management needs of Seneca and other oil and gas operators in the Appalachian basin. As a result of HFS’s continued growth, we will begin disclosing key metrics related to their operations.

Scope 1 Methane Emissions (Metrics Tons CH ₄ as CO ₂ e)	2022
EPA Mandatory Reporting Sources ¹	0
Other Sources ²	13
Total HFS	13

Scope 1 Greenhouse Gas Emissions (Metric Tons CO ₂ e) ³	2022
EPA Mandatory Reporting Sources ¹	0
Other Sources ²	14,467
Total HFS	14,467

Scope 2 Greenhouse Gas Emissions (Metric Tons CO₂e)

2022
607

HFS continues to evaluate and implement electric and natural gas-powered equipment in place of diesel-powered equipment to minimize criteria pollutants.

HFS Criteria Pollutant Emissions (Metric Tons)

	2022
CO	127.53
NO _x	96.98
PM-10	5.57
SO _x	9.68
VOCs	29.05

1 HFS does not currently have any facilities that are required to report under EPA Mandatory Reporting Rules.

2 Other Sources include sources identified under NGLSI, fleet, office and small sources that do not meet EPA Subpart W Reporting requirements.

3 CO₂e values calculated in accordance with the published 100-year time horizon global warming potential (GWP) values from the IPCC Fifth Assessment Report (AR5, 2014) as preferred by SASB.



Water Management

For a detailed discussion of Seneca's best-in class water management practices, see [Biodiversity Impacts](#).

In connection with Seneca's operations, we attempt to minimize our use of freshwater through the recycling of over 90% of our produced water and flowback. All of our freshwater is sourced from locations without high water risk due to the abundance of groundwater. In 2022, Seneca again increased its completions activity in the Eastern Development Area (EDA). More wells were drilled on these pads which resulted in increased freshwater usage.

Freshwater Withdrawn and Freshwater Consumed (Thousands of Cubic Meters)¹

	2020	2021	2022
Total Water Withdrawn	428	1,149	1,686
% of Water from Locations with High or Extremely High-Water Risk	0%	0%	0%
Total Freshwater Consumed	770	1,166	1,696
% of Water Consumed from Locations with High or Extremely High-Water Risk	0%	0%	0%

Volume of Produced Water and Flowback Generated (Thousands Cubic Meters)²

	2020	2021	2022
Produced Water and Flowback	1,294	1,620	1,764
% Discharged	0%	0%	0%
% Injected for Disposal	3.5%	7.4%	9.7%
% Recycled	96.5%	92.6%	90.3%

¹ Freshwater withdrawn and consumed is tracked and reported to the PA DEP and Susquehanna River Basin Commission.

² Produced, injected and recycled water volumes are measured and recorded daily as per standard field operating procedures, and are reported to PA DEP.



Seneca replaced this stream culvert in McKean County to increase stream flow, enhance aquatic wildlife, and improve roadway safety.

Water Management Practices

Seneca prides itself on being an industry leader in managing water assets. This is evident by the vast infrastructure we've developed to handle all aspects of our water management needs, including storage, treatment, transportation, recycling and disposal.

Protecting Fresh Water Aquifers

Seneca's horizontal drilling practices use only water-based drilling fluid or air when drilling through freshwater zones. During other stages of drilling, a synthetic oil-based mud system is used once freshwater zones are protected by casing and cement.

Seneca performs pre-drilling water samples on any water source within a 4,000-foot radius from the center of the pad to obtain a baseline measurement. Seneca contracts with an independent third-party environmental consultant to compile a list of property owners who are notified of the proposed drilling activities and Seneca's intention to sample their water source(s). The environmental consultant collects the necessary groundwater and surface water samples and sends the samples to a PA-certified laboratory for testing. The analytical results are electronically submitted to the PADEP. Summary reports with the analytical results and informational pamphlets are also sent to the landowners. In accordance with applicable regulations, Seneca conducts post-drill sampling as necessary when a water quality complaint is filed by a landowner.

In 2022, a total of 140 pre-drill water samples were collected. Seneca received five water complaints. Two complaints were reported for increased turbidity (cloudiness) in water wells within 1,500 feet from an unconventional well in Tioga County. Both were determined to be due to natural variability, and unrelated to oil and gas activities. Three complaints were reported for the presence of methane in groundwater in Tioga County. Two of the methane complaints were outside of the 2,500-foot radius of presumption, one of which had significant methane present in pre-drill samples. Seneca is currently providing alternative potable water sources to the three landowners while complaints are under investigation.

"Zero Surface Discharge" Policy

For all unconventional operations, Seneca follows a strict "Zero Surface Discharge" policy, which requires containment for any liquids or solids that may be considered residual waste in all aspects of our operations, as a means of protecting surface and groundwater resources throughout the life of a well. All wastes are managed in "primary containment" vessels, which are placed inside of secondary containment systems, and often tertiary containment, designed to capture and control spills or leaks.

Highland Field Services

Since its inception in 2015, Highland has invested over \$100 million in water infrastructure in Pennsylvania, including storage and treatment facilities, on-pad tanks and containment vessels, injection wells and a network of water distribution pipelines. The environmental, operational and economic goals and achievements of Highland include:

- **Recycling Produced Fluids:** Seneca plans its development schedule and works closely with Highland and Seneca's other third-party service companies to optimize Seneca's ability to utilize recycled produced fluids. Highland also receives and recycles produced volumes generated from third-party operators, who would otherwise need to transport their produced fluids for out-of-state disposal. In calendar year 2022, Highland recycled over 90% of Seneca's produced fluids, or 10 million barrels, plus an additional 1.59 million barrels of fluids that were generated by and received from third-party operators. In 2022, Seneca's Marcellus and Utica shale well completions used 53% recycled fluids and only 47% freshwater.



Highland recycled over 90% of Seneca's produced fluids

- **Reducing Environmental Footprint:** Highland manages the movement of approximately 1.1 million barrels of fluid every month. In the Western Development Area, approximately 73% is pumped through Highland's pipeline distribution system to deliver fluids from storage facilities directly to Seneca's Marcellus and Utica development pads. Highland plans to replicate this model in the EDA.
- **Developing Innovative, Environmentally Sound Disposal Solutions:** While our goal is to recycle 100% of the produced fluids generated by Seneca's production, it is important to have disposal capabilities available to cover any potential operational delays or other issues. As such, Seneca and Highland have been actively developing their own underground disposal well capabilities beneath an underground injection control (UIC) program designed to manage Seneca's disposal needs in an environmentally sound manner. Seneca and Highland currently have operating UIC wells in Pennsylvania and Ohio.
- **Promoting Transparency and Regulatory Compliance:** All fluid handled by Highland, including type, volume, origin and destination, is tracked for regulatory and internal reporting purposes. We are required to report the fluid movement and usage in various forms, including downhole volumes for well completion, incoming/outgoing loads at the storage facilities and pads, fluids utilized by third-party operators and freshwater storage levels across our operations.
- **Lowering Fluids Management Costs:** The environmental benefits derived from Highland's efforts to recycle and avoid the disposal of produced fluids also results in significant economic benefits for Seneca and its third-party operator customers.

Public Disclosure of Fracturing Chemicals Used

Since February 2011, 100% of the chemicals used in Seneca's hydraulically fractured wells have been disclosed on www.fracfocus.org, the chemical registry website created by the Ground Water Protection Council and the Interstate Oil and Gas Compact Commission. This site contains detailed information about the hydraulic fracturing process and a listing on a well-by-well basis that specifies the contents of hydraulic fracturing fluids used at each location.

Chemical Usage

Seneca has adopted the use of non-toxic "green" friction reducer and scale inhibitor formulas during completions operations. In addition, the volume of chemicals being utilized is regularly evaluated, and opportunities to reduce the volume and/or concentration of chemicals is a priority.

Focus on Biodiversity Protection

Environmental Management Policies and Practices

Environmental Management System Overview

Environmental stewardship is a guiding principle, which is clearly defined in Seneca's EHS Values and included in Seneca's EHS Policy. The EHS Policy is regularly reviewed, updated and approved by Seneca leadership. Quarterly meetings are held at the executive level to discuss environmental matters across all segments of the company. Quarterly management review meetings are also held between the Seneca EHS team and senior leadership to discuss environmental, health, safety and sustainability activities, metrics and opportunities.

The Seneca Integrated Management System ("IMS") is a comprehensive system that applies to all aspects and phases of our operations. This system is modeled after ISO Standards, Equitable Origin's EO100™ Standard for Responsible Energy Development and the International Finance Corporation Performance Standards. Although Seneca does not formally participate in or apply for certification in ISO 14001 (Environmental Management), or ISO 45001 (Occupational Health & Safety Management), those frameworks are used as the foundation for creating a complete management system for our upstream operations. Seneca also has a set of BMPs for critical operations such as containment construction and flowback operations. These BMPs are in addition to our standard operating procedures and other guidance documents for normal activities.

Development and Risk Management

Before our Upstream Segment acquires any property, EHS professionals conduct an Environmental Site Assessment (ESA). This ESA consists of a detailed review of potential environmental liabilities (e.g., underground storage tanks, landfills, hazardous material, pesticides, sumps, asbestos, lead paint, PCBs and radon), identification of biological habitats, environmental condition of the soil/vegetation and the condition of any equipment (e.g. wells, pipelines, tanks, facilities, etc.).

Seneca is committed to minimizing impacts on biodiversity and regularly goes beyond regulatory requirements to understand, maintain and increase biodiversity throughout our operating areas. Once Seneca decides to develop an area, environmental considerations are a top priority and in-depth biological assessments are conducted to identify protected habitats. We also perform wetland surveys to identify wetlands or streams. We work closely with federal, state, county and local agencies, as well as non-profit environmental organizations to ensure all habitats are identified and appropriate steps are taken to protect them. Seneca provides employees and contractors with regular training regarding environmental responsibilities and wildlife to increase awareness of biodiversity considerations.

Natural Resources Consumption

Seneca was the first company in the Appalachian Basin to use a bi-fuel drilling rig. Our Upstream Segment has since expanded that use to include bi-fuel frac pumps that use field gas in lieu of diesel as a fuel source. In 2023, we began our transition to electric frac equipment to further reduce emissions. With this new equipment, we have seen diesel substitution rates of 70% and expect that figure to increase to 90% as additional equipment is introduced to the fleet. This technology allows us to reduce energy usage and extend the life of our equipment. In addition, Seneca has identified opportunities to leverage solar to power continuous emissions monitoring devices, thermoelectric generators and other devices in its operations.



This tree planting event is part of Seneca's Surface Footprint Neutral Program that includes restoring, enhancing or protecting biodiversity by returning one acre of land to the environment for every acre disturbed.



Waste Management

Seneca operations generate various waste streams with most being actively managed to reduce, reuse and/or recycle. No hazardous wastes are produced. Generated wastes are classified as non-hazardous, or “residual waste,” according to the PADEP.

Seneca performs sampling to characterize the physical, chemical and radiological properties of the waste, in accordance with permit requirements.

Seneca continuously looks for opportunities to reduce the amount of waste it generates and tries to reuse materials, if possible. Drilling mud, for example, is extracted from drill cuttings through centrifugation and reused repeatedly, even being transferred from one location to the next for continual reuse. Drill cuttings have been classified as having no beneficial use. The PADEP will not allow any reuse of that waste stream for Seneca and other Pennsylvania operators. Oils used in equipment, such as compressor engines, are gathered at a central location and are reused/recycled. Other products such as pipe or steel will be sold as scrap, and are either reused or recycled.

All Non-Hazardous Waste ¹	Liquid Waste (in bbls)	Solid Waste (in tons)
Injection	284	—
Landfilled	—	97,312
Recycled	1,514	46
Reused	345,350	—
Total	347,148	97,358

¹ Waste Management values include data from both Seneca and Highland Field Services.

The most significant reuse stream involves Seneca’s produced water, as further described in the [Water Management](#) section.

Ecological and Biodiversity Impacts

Seneca routinely conducts biological surveys with respect to a large portion of our footprint to identify specific habitats of endangered species. The project development groups use these surveys in site selection to avoid areas where there are known habitats or nests. Seneca works with professional biologists and botanists to develop mitigation measures, including natural barriers (ridge-line or stand of trees) and artificial barriers (biologic protective fencing), if it isn’t possible to avoid disturbances to known species.

As a best practice, we generally avoid sensitive areas that would require additional permitting and protective requirements. Several environmental protection lists (e.g., IUCN Redlist) describe general habitats and areas where protected species may be present. Our practice is to review these lists and ensure we are avoiding impacts to protected flora and fauna to the extent reasonably possible. The foundation of our practices is built around our compliance with applicable federal, state and local laws and regulations.

Environmental Impacts of Project Development

Seneca maintains a constant focus on compliance with all applicable environmental laws, regulations and other requirements. This includes monitoring by an internal Compliance Department focused on ensuring such compliance, as well as participation in industry groups such as the AXPC and MSC.

Our Upstream Segment operations are subject to applicable regulation and oversight from the PADEP, Susquehanna River Basin Commission, PA Fish and Game Commission, DCNR, PA Department of Labor and Industry and the EPA. In 2022, the PADEP inspected Seneca more than 3,000 times. Seneca also voluntarily provides this data to the PADEP.

Number and Volume of Spills > 1 Bbl ¹	2020	2021	2022
Number of Hydrocarbon Spills > 1 Bbl	0	0	0
Total Volume of Hydrocarbon Spills (in Bbls)	0	0	0
Total Volume of Hydrocarbon Spills Impacting Environmentally Sensitive Shoreline ²	0	0	0
Total Volume of Hydrocarbon Spills Recovered (in Bbls)	0	0	0
Number of Non-Hydrocarbon Spills > 1 Bbl	3	1	1
Total Volume of Non-Hydrocarbon Spills (in Bbls)	16	354	300
Total Volume of Non-Hydrocarbon Spills Recovered (in Bbls) ³	0	250	0
Total Volume of Spills Occurring in the Arctic ⁴	N/A	N/A	N/A

- Includes spills greater than 1 bbl that reached the environment. Spills that were contained within impermeable secondary containment are excluded.
- The scope of spills to environmentally sensitive shorelines includes hydrocarbon spills to water that reached the soil or spills directly to the soil of shorelines with Environmentally Sensitive Index levels 8 through 10, where levels are defined according to U.S. National Oceanic and Atmospheric Administrations (NOAA)'s [shoreline sensitivity rankings list](#).
- Recovered volumes were listed as zero if they could not be reasonably estimated.
- Seneca does not operate in the Arctic; therefore this item is not applicable.

“Seneca Resources recognizes that habitat loss and invasive plant species are leading threats to sustained, healthy biodiversity. The Surface Footprint Neutral Program is a testament to Seneca’s commitment to leave behind as small a footprint as possible so that future generations can continue to enjoy the natural resources our operating area has to offer.”

Ben Williams
Senior Manager, Construction



Reserves Located Within Sites with Protected Conservation Status or Endangered Species Habitat (Bcfe)

Seneca has submitted more than 175 Pennsylvania Natural Diversity Inventory (PNDI) permits over the past 5 years. These permits are a part of the Pennsylvania Natural Heritage Program (PNHP) partnership between various state regulatory agencies that review these submittals for potential impacts to threatened, endangered, special concern species and special concern resources.

Permits are submitted and reviewed against the varying agencies' mapping of protected habitats statewide. If there is not a threatened or endangered species in the submitted permit's area, the permit is approved. If threatened or endangered species show up in this review, Seneca contracts a third-party environmental engineering firm to survey the area. A biological survey will then confirm whether the species of special concern is present in the permit area. If these species are found, mitigating actions are taken, including route avoidance, special fencing or other restrictions.

Approximately 4% of PNDI permits over the past 5 years were in areas of confirmed endangered species habitat, and in all cases, Seneca was able to mitigate the impact to these known species. These mitigation efforts, coupled with alternate routing options and horizontal drilling, has minimized impact to critical habitat while ensuring efficient reserves extraction.

Total Seneca Reserves Near Sites with Protected Conservation Status or Endangered Species Habitat

Total Reserves (Bcfe) at fiscal year-end 2022	4,172
Reserves Within Sites with Protected Conservation Status	17.4
% of Reserves within Protected Conservation	0.42%
Reserves Within Areas in Which Endangered Species Habitat Identified	169.9
% of Reserves within Areas of Endangered Species	4.07%

Workforce Health and Safety

Total Recordable Incident Rate (TRIR), Fatality Rate and Near-Miss Frequency Rate (NMFR)

Seneca staffs a full-time EHS department, with multiple trained EHS professionals, that covers all major departments in the company. It is the job of each EHS Representative to perform daily inspections of job tasks, identifying risks and hazards that our operations pose to employee and contractor safety. Additionally, EHS Representatives complete hazard assessments on major projects, lead the management of change program and coordinate field safety meetings for contractors. When an incident occurs, the EHS team conducts a thorough investigation, identifies root causes, and creates a proper response through safety communications and incident review meetings.

TRIR	2020	2021	2022
Full-Time Employees	0.51	0.00	0.48
Contract Employees	0.75	1.00	0.51

Fatality Rate	2020	2021	2022
Full-Time Employees	0.00	0.00	0.00
Contract Employees	0.25 ¹	0.00	0.00

NMFR ²	2020	2021	2022
Full-Time and Contract Employees	7.64	7.82	2.03

¹ In 2020, there were two fatalities of third-party contractor employees: (1) A contractors' employee that was working on a roof replacement project at an office location fell off the roof and sustained fatal injuries. At the time the fall occurred, the contractor was wearing a harness but was not tied off to an anchor point, a violation of OSHA's fall protection standard. (2) A contractors' employee was unloading a contractor owned piece of heavy equipment and sustained fatal injuries when the hydraulic ramp on the contractor's truck trailer came down on top of him. The contractor was improperly positioned behind the ramp when he attempted to manually lower it due to a failed hydraulic system.

² Seneca tracks near misses reported by contractors and employees as a single metric.

Seneca recognizes the importance of near miss reporting as a tool to identify and address hazards and risks before they lead to a higher severity incident. To address the decrease in our NMFR in 2022, we have implemented the following efforts: company-wide re-training on near miss reporting, visibility of NMFR in Monthly EHS Reports and increased awareness among internal and external stakeholders.

Average Hours of Health, Safety and Emergency Response Training

All Seneca and HFS employees receive documented safety training. In 2022, on average, employees received 10.52 hours of health, safety and emergency training. In addition, Seneca provides significant training to its contractors (approximately 4,300 total hours in 2022), including an annual contractor safety meeting, annual EHS site orientation and contractor safety stand downs.

Safety Management System

Safety is the highest priority and Seneca works to promote a culture committed to safe work practices for the protection of personnel and the environment. Seneca has an environmental, health and safety mission, vision and principles that provide a strong foundation for its safety program.

Seneca's gas operations' overall objective is to maximize the value of its mineral and human capital. The accomplishment of this objective is a function of conducting its business in a manner that provides for a healthful environment for its employees, contractors and the public in accordance with laws and regulations governing environmental and safety compliance.

Safety Leadership: Tone at the Top

- Executive messaging in a monthly EHS Report that is distributed companywide;
- Quarterly EHS-Executive Management Review Meetings, which are attended by EHS staff as well as senior management;
- Senior management presentations on various EHS topics at annual Contractor Safety Meetings which are attended by both employees and contractors;
- Safety messaging by senior management during staff meetings and all employee town hall meetings;
- Management participation in the Management Audit Program which is comprised of teams of various disciplines that perform quarterly safety inspections; and
- Executive and employee bonus program metrics are tied to safety initiatives.

Safety Communications and Training

- Monthly safety training covering a variety of topics, including driving safety, ergonomics and winter weather hazards;
- EHS Intranet site dedicated to safety;
- Frequent safety alerts and safety communications are distributed to all employees;
- Periodic safety stand-downs in the field to discuss safety issues; and
- Annual EHS Site Orientation for employees and contractors to reinforce safety expectations.

Compliance and Contractor Management

- Before onboarding, contractor safety metrics and written safety programs are reviewed against established criteria. Once onboarded, metrics continue to be reviewed and concerns are addressed through variances and performance improvement plans;
- Regular safety inspections are performed by EHS Representatives;
- Job Safety Analysis reviews are performed to ensure adequate hazard identification and risk mitigation efforts are in place;
- Safety audits of contractor safety programs and activities are performed;
- Pre-job planning meetings and field reviews are conducted prior to commencing operations such as rig moves, fracs and flowback;
- Annually, an external assessment of an aspect of Seneca's operations is performed by a third-party subject matter expert; and
- Seneca actively participates in industry groups such as the MSC and AXPC.

Engagement Processes and Due Diligence Practices with Respect to Human Rights, Indigenous Rights and Operations in Areas of Conflict

Seneca does not currently explore for or develop any oil and gas reserves located within Indigenous lands or areas of conflict. Seneca is committed to ensuring that all people are treated with respect and fairness and expects all employees, contractors and vendors to maintain the same standard of inclusion that Seneca supports.

Community Relations



Management of Risks and Opportunities Associated with Community Rights and Interests

Most of the considerations concerning community economic and social impacts of oil and gas development in Pennsylvania are codified by the respective governing and regulatory bodies that oversee such operations. In addition, Seneca utilizes recommended practice guidelines from the various trade associations such as MSC and AXPC where we operate.

Seneca has been providing Pennsylvania energy and jobs for over 100 years and is committed to being a good neighbor to the communities in which we live and operate. In addition to providing energy and jobs, Seneca injects money into our operating areas through the payment of taxes and royalties. In 2022, Seneca paid over \$24 million in Act 13 impact fees which are distributed to local governments and state agencies such as the PADEP, Pennsylvania Emergency Management

Agency and the Fish and Boat Commission, among others. Seneca also paid more than \$180 million in royalties to individual landowners, the DCNR and PA Game Commission. We operate with integrity and strive to build positive and constructive relationships to uphold our reputation as an honest and fair operator.

Seneca's corporate giving strategy is focused on three key pillars:

	Build Healthy & Safe Communities for All
	Protect and Improve Our Environment & Promote Equitable Access to the Outdoors
	Support Equitable & Thriving Societies

Seneca also established an internal charitable giving committee in 2022 to evaluate requests for donations and ensure that all donations support our giving pillars while meeting our core values.

In 2022, Seneca donations focused on supporting first responders and emergency preparedness, conservation districts, sustainability projects, agriculture and educational opportunities.

Impacts From Non-Technical Delays

Seneca builds additional lead time into its projects to account for anticipated delays. For example, changing legislation, regulations and processes at the state and federal level has created the need to build in additional time for permitting and construction projects. As described more fully in the Company's Risk Management Section, the Company identifies legislative and regulatory risks that could impact the Company's strategic planning and capital spending processes.

Reserves Valuation and Capital Expenditures

Sensitivity of Reserve Levels to Scenarios that Account for a Price on Carbon Emissions

Seneca reviewed sensitivities to its reported fiscal 2022 year-end reserves utilizing crude oil and U.S. natural gas pricing for three different scenarios outlined in the 2022 World Energy Outlook ("WEO") Report – the Announced Pledges, Stated Policies and Net-Zero by 2050 scenarios. The WEO Announced Pledges Scenario reflects all of the current global climate policy commitments and targets, assuming these goals are met in full within the intended target timeline. The WEO Stated Policies Scenario reflects what governments are doing to achieve stated targets and objectives they have set out rather than what they say they will achieve. The WEO Sustainable Development Scenario has been excluded from the WEO 2022 report because of its similarities to the current Announced Pledges Scenario. The new WEO Net Zero by 2050 Scenario examines a pathway to net zero emissions or the global energy sector consistent with minimizing global temperature rise to 1.5 °C.

Fossil Fuel Prices by Scenario (source WEO 2022)

Real Terms (USD 2020)	Net Zero Emissions by 2050				Announced Pledges		Stated Policies	
	2010	2021	2030	2050	2030	2050	2030	2050
IEA Crude Oil (USD/barrel)	96	69	35	24	64	60	82	95
Natural Gas (USD/MBtu)								
United States	5.3	3.9	1.9	1.8	3.7	2.6	4.0	4.7
European Union	9.0	9.5	4.6	3.8	7.9	6.3	8.5	9.2
China	8.0	10.1	6.1	5.1	8.8	7.4	9.8	10.2
Japan	13.3	10.2	6.0	5.1	9.1	7.4	10.9	10.6

Seneca reviewed the impact of the oil and natural gas prices included in the WEO Report commodity pricing table on its fiscal 2022 reported reserves. All associated operating costs and capital inputs assumed in calculating Seneca's SEC-reported reserves were held constant for the WEO scenarios.

Based on the above assumptions, Seneca calculated net fiscal year 2022 reserves for the three WEO Report policy scenarios. With respect to Seneca's operations, the pricing shown in each of the WEO Report Scenarios would not be expected to have a material negative impact on Seneca's reported fiscal 2022 reserves, due to the low operating costs and high percentage of reserves produced early in the lifecycle of our wells.

Seneca Estimated Net Proved Reserves (Bcfe) Under WEO Report Scenario Analysis

Net Reserves BCFE	
SEC Reserves Report	4,172
Announced Pledges	4,171
Stated Policy	4,172
Net-Zero by 2050	4,157

Impacts of Hydrocarbon Price and Demand, and Climate Regulation on Capital Expenditures

The Company monitors developments surrounding climate change and associated climate-related risks, including financial and regulatory impacts on the oil and gas industry. Regulations in the Inflation Reduction Act of 2022 that aim to reduce methane emissions include a methane fee expected to be applicable to the reported annual methane emissions of certain oil and gas facilities (above specified methane intensity thresholds) commencing January 1, 2024. The Board and management consider these risks, commodity prices, demand and opportunities in their strategic and capital spending decision process. Further, since the Company operates an integrated business with assets being utilized for, and benefiting from, the production, transportation and consumption of natural gas, the Board and management consider the impact of climate change developments on future natural gas usage.

Critical Incident Management

Process Safety Event (PSE) Rates for Loss of Primary Containment

In 2022, Seneca Resources did not have any events that are classified as a Tier 1 process safety event (“PSE”). To determine classification of PSE’s, Seneca used the International Association of Oil & Gas Producers Publication 456: Process Safety – Recommended Practice on Key Performance Indicators.



Management Systems Used to Identify and Mitigate Catastrophic and Tail-End Risks

As indicated in the [Risk Management](#) section, the Company identifies, assesses and manages risks through its ERM framework. In addition to the corporate ERM process, Seneca Resources has the following processes to identify and mitigate risks:

Risk Identification Processes

- Hazard Operability Studies and Hazard Identification Studies are performed to identify and rank risks and safeguards;
- Job Safety Assessments or Job Hazard Assessments are performed before tasks are started so that specific hazards can be identified and mitigative measures identified;
- Simultaneous Operations planning and field reviews are conducted to ensure proper communication and coordination between parties working at the same location at the same time;
- Pre-Startup Safety Reviews are completed before turning on a new well pad or facility;
- A Management of Change process is in place to evaluate proposed changes and verify that no new hazards are being introduced;
- Mechanical integrity assessments of each well are documented and completed quarterly;
- Leak detection and repair inspections using a FLIR infrared camera are performed quarterly to identify leaks; and
- Automation equipment at well sites and facilities detect abnormal levels and send alarms.

Risk Mitigation Mechanisms

- General and Site-Specific Emergency Response Plans and Spill Plans;
- Employees receive safety and environmental training including well control, first aid and spill response. In addition, Seneca provides a spill response trailer to all personnel in our CRV operating area. This spill trailer contains spill sock, boom, overpack drums and tools to assist in uncontrolled releases. Seneca follows an ICS structure when responding to spill incidents;
- Emergency response drill plans are developed for the east division. Management is given quarterly updates on status and findings of each emergency response drill. Verbal and tabletop emergency response drills are conducted regularly;
- Contracts with Well Control and Spill Response specialists are in place;
- Regular safety inspections are performed to identify potential hazards and issues of non-compliance; non-compliance items are assigned to foreman or supervisors of each activity group for corrective actions;
- Risks identified during the SimOps planning and review process are addressed using mitigative measures such as cages over wellheads, additional gas detection, physical barriers, portable emergency shutdown devices, etc.;
- Automation equipment at well sites and facilities detect abnormal levels and send alarms;
- Management Audit Program safety inspections are completed quarterly;
- Annual operational assessments are performed by third-party subject matter experts;
- Active participation in industry groups (MSC, AXPC) and committees;
- Contractor vetting and management (ISNetworld);
- An annual EHS Site Orientation is required for all employees and contract employees that perform work on site in Appalachia; and
- Contractor Safety Meetings are conducted annually to review topics such as safety expectations, near misses and best practices.

Activity Metrics

	2020	2021	2022
Net Gas Production (MMcf/day)	674.58	856.17	961.33
Net Oil Production (Mbbl/day)	.01	.01	.07
Number of Offshore Sites	0	0	0
Number of Terrestrial Sites	900	966	973

Cautionary Note on ESG Data and Forward-Looking Statements

All information included in this Corporate Responsibility Report is being provided on a voluntary basis, and as such, the Company has included and excluded certain topics to customize certain sustainability standards and frameworks to our specific circumstances. The decision to include data for historical and future years is at the discretion of the Company and its subsidiaries, and the specific years used as a historical baseline were chosen as appropriate for each reporting segment. The ESG data included in this report does not constitute financial data calculated in accordance with generally accepted accounting principles (“GAAP”). This Corporate Responsibility Report also contains “forward-looking statements” as defined by the Private Securities Litigation Reform Act of 1995. Forward-looking statements are all statements other than statements of historical fact, as well as statements that are identified by the use of the words “anticipates,” “estimates,” “expects,” “forecasts,” “intends,” “plans,” “predicts,” “projects,” “believes,” “seeks,” “will,” “may” and similar expressions. This Corporate Responsibility Report and the statements contained herein are submitted for the general information of Company stakeholders and are not intended to induce any sale or purchase of securities or to be used in connection therewith. While the Company’s expectations, beliefs and projections are expressed in good faith and are believed to have a reasonable basis, actual results may differ materially from those projected in forward-looking statements. Furthermore, each forward-looking statement speaks only as of the date on which it is made. In addition to other factors, the following are important factors that could cause actual results to differ materially from those discussed in the forward-looking statements: (1) the Company’s ability to estimate accurately the time and resources necessary to meet applicable testing standards, reporting frameworks, and emissions targets; (2) disallowance by applicable regulatory bodies of appropriate rate recovery for system modernization; (3) governmental/regulatory actions and/or market pressures to reduce or eliminate reliance on natural gas; and (4) the other risks and uncertainties described in (i) the Company’s most recent Annual Report on Form 10-K at Item 7, MD&A, and Quarterly Reports on Form 10-Q at Item 2, MD&A, under the heading “Safe Harbor for Forward-Looking Statements,” and (ii) the “Risk Factors” included in the Company’s most recent Annual Report on Form 10-K at Item 1A, as updated by the Company’s Forms 10-Q for subsequent quarters at Item 1A. The Company disclaims any obligation to update any forward-looking statements to reflect events or circumstances after the date hereof. Because of these risks and uncertainties, readers should not place undue reliance on these forward-looking statements or use them for anything other than their intended purpose. This report contains references to National Fuel’s website and other reporting documents. National Fuel is not incorporating this report by reference into any other document and is not incorporating any other document posted on the website into this report. Except where specified, this report and the data presented have not been externally audited, assured, attested or verified. The Company makes no warranty, express or implied, regarding the accuracy, adequacy, completeness, legality, reliability or usefulness of this report.

Appendix A: Index of Sustainability Reporting Topics, by Segment

Climate-Related Financial Disclosures (TCFD)

TCFD Pillar	Metric	Report Section
Governance	Describe the board's oversight of climate-related risks and opportunities.	<ul style="list-style-type: none"> Governance of Corporate Responsibility and Sustainability
	Describe management's role in assessing and managing climate-related risks and opportunities.	<ul style="list-style-type: none"> Governance of Corporate Responsibility and Sustainability Risk Management
Strategy	Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	<ul style="list-style-type: none"> Climate-Related Risks and Potential Impacts Climate-Related Opportunities
	Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	<ul style="list-style-type: none"> Climate-Related Risks and Potential Impacts Climate-Related Opportunities
	Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	<ul style="list-style-type: none"> Resiliency
Risk Management	Describe the organization's processes for identifying and assessing climate-related risks.	<ul style="list-style-type: none"> Risk Management
	Describe the organization's processes for managing climate-related risks.	<ul style="list-style-type: none"> Risk Management
	Describe how processes for identifying, assessing and managing climate-related risks are integrated into the organization's overall risk management.	<ul style="list-style-type: none"> Climate-Related Strategy
Metrics and Targets	Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	<ul style="list-style-type: none"> Metrics and Targets
	Disclose Scope 1, Scope 2 and, if appropriate, Scope 3 greenhouse gas emissions and the related risks.	<ul style="list-style-type: none"> Downstream Greenhouse Gas Emissions Midstream Greenhouse Gas Emissions Upstream Greenhouse Gas Emissions
	Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	<ul style="list-style-type: none"> Metrics and Targets Downstream Greenhouse Gas Emissions Midstream Greenhouse Gas Emissions Upstream Greenhouse Gas Emissions

Governance and Consolidated Company Disclosures

Topic	SASB(a)	GRI (Core)(b)
Statement From Senior Decision Maker	—	102-14
Organizational Profile	—	102-1, 102-2, 102-3, 102-4, 102-6
Governance Structure	—	102-18
Delegating Authority	—	102-19
Executive-Level Responsibility	—	102-20
Risk Management	EM-EP-540a.2	102-15, 102-30
Ethics and Integrity	EM-EP-510a.2	102-16
Mechanisms for Advice and Concerns about Ethics		102-17
Management of the Legal and Regulatory Environment	EM-EP-530a.1	102-30
Human Capital – Labor Practices	IF-WM-310a.1, IF-WM-310a.2	102-41
Human Capital – Employee Benefits		401-2, 403-6
Human Capital – Employee Development		404-2
Human Capital – Diversity and Inclusion	TC-SI-330a.3	405-1
Human Capital – Employee Engagement	TC-SI-330a.2	
Social Capital – Data Security	TC-SI-230a.2	

Downstream Segment Appendix

Topic	SASB(a)	GRI (Core)(b)
Greenhouse Gas Emissions		
Ecological Impacts		
Waste Management		
Integrity of Gas Delivery Infrastructure	IF-GU-540a.1, IF-GU-540a.2, IF-GU-540a.3, IF-GU-540a.4	203-1
Energy Affordability	IF-GU-240a.1, IF-GU-240a.2, IF-GU-240a.3, IF-GU-240a.4	
End Use Efficiency	IF-GU-420a.1, IF-GU-240a.2	
Activity Metrics	IF-GU-000.A, IF-GU-000.B, IF-GU-000.C	102-6

Midstream Segment Appendix

Topic	SASB(a)	GRI (Core)(b)
Greenhouse Gas Emissions	EM-MD-110a.1, EM-MD-110a.2	305-1
Air Quality	EM-MD-120a.1	305-7
Ecological Impacts	EM-MD-160a.1, EM-MD-160a.2, EM-MD-160a.3, EM-MD-160a.4	103-2, 304-1, 304-3, 306-3
Competitive Behavior	EM-MD-520a.1	
Operational Safety, Emergency Preparedness and Response	EM-MD-540a.1, EM-MD-540a.2, EM-MD-540a.4	103-22
Activity Metrics	EM-MD-000.A	

Upstream Segment Appendix

Topic	SASB(a)	GRI (Core)(b)
Greenhouse Gas Emissions	EM-EP-110a.1, EM-EP-110a.2, EM-EP-110a.3	305-1, 103-2
Air Quality	EM-EP-120a.1	305-7
Water Management	EM-EP-140a.1, EM-MP-140a.2, EM-EP-140a.3, EM-EP-140a.4	303-3, 306-1
Biodiversity Impacts	EM-EP-160a.1, EM-EP-160a.2, EM-EP-160a.3	103-2, 306-3
Security, Human Rights, and Rights of Indigenous Peoples	EM-EP-210a.1, EM-EP-210a.2, EM-EP-210a.3	
Workforce and Health Safety	EM-EP-320a.1, EM-EP-320a.2	103-2
Community Relations	EM-EP-210b.1, EM-EP-210b.2	
Reserves Valuation & Capital Expenditures	EM-EP-420a.1, EM-EP-420a.2, EM-EP-420a.3, EM-EP-420a.4	201-2
Business Ethics & Transparency	EM-EP-510a.1, EM-EP-510a.2	102-16
Management of Legal & Regulatory Environment	EM-EP-530a.1	102-30
Critical Incident Risk Management	EM-EP-540a.1, EM-EP-540a.2	306-3, 102-15, 102-30
Activity Metrics	EM-EP-000.A, EM-EP-000.B, EM-EP-000.C	102-4



Appendix B: Consolidated Data Tables Posted: September 11, 2023

This workbook contains a consolidated view of our ESG metrics for years 2020, 2021, and 2022. Our disclosure primarily uses the standards of the Sustainability Accounting Standard's Board (SASB), but it also encompasses sustainability data considered under our Task Force on Climate-Related Financial Disclosures (TCFD) reporting. This information is presented in our Report with more detail. Total values between charts may vary slightly due to conventional rounding.

Downstream Segment

Scope 1 & 2 Emissions Intensity (kg CO ₂ e/BOE)	2020	2021	2022
Utility (NY)			
Methane Emissions Intensity	14.0	13.2	12.7
Greenhouse Gas Emissions Intensity	14.4	13.7	13.2
Utility (PA)			
Methane Emissions Intensity	15.6	14.5	14.4
Greenhouse Gas Emissions Intensity	16.1	15.0	14.9
Utility (All)			
Methane Emissions Intensity	14.5	13.6	13.3
Greenhouse Gas Emissions Intensity	15.0	14.1	13.7
Scope 1 Greenhouse Gas Emissions (Metrics Tons CO₂e)			
Utility (NY)			
EPA Subpart W Mandatory Reporting	171,000	163,165	154,240
Additional EPA Subpart W Facilities	1,556	1,505	1,373
Other Sources	65,502	65,560	65,619
Total Utility (NY)	238,058	230,230	221,232
Utility (PA)			
EPA Subpart W Mandatory Reporting	96,861	94,088	90,742
Additional EPA Subpart W Facilities	110	0	198
Other Sources	30,226	30,190	30,312
Total Utility (PA)	127,197	124,278	121,252
Utility (All)			
EPA Subpart W Mandatory Reporting	267,861	257,253	244,982
Additional EPA Subpart W Facilities	1,666	1,505	1,571
Other Sources	95,728	95,750	95,931
Total Utility (All)	365,256	354,508	342,484

Methane (CH ₄) Emissions (Metrics Tons)	2020	2021	2022
Utility (NY)			
EPA Subpart W Mandatory Reporting	6,099	5,820	5,502
Additional EPA Subpart W Facilities	56	54	49
Other Sources	2,105	2,091	2,097
Total Utility (NY)	8,260	7,964	7,648
Utility (PA)			
EPA Subpart W Mandatory Reporting	3,456	3,356	3,237
Additional EPA Subpart W Facilities	4	0	7
Other Sources	963	953	955
Total Utility (PA)	4,423	4,309	4,199
Utility (All)			
EPA Subpart W Mandatory Reporting	9,555	9,176	8,739
Additional EPA Subpart W Facilities	60	54	56
Other Sources	3,068	3,044	3,053
Total Utility (All)	12,683	12,273	11,847
Scope 2 Emissions (Metrics Tons CO₂e)			
New York	730	603	534
Pennsylvania	552	506	452
Total Utility (All)	1,282	1,109	986

continued

Downstream Segment (continued)

Downstream and Midstream Waste Summary ¹	2022
Solid Waste Weight (MT)- Hazardous	
Incineration	4.63
Landfill	2.61
Recovery	0.32
Recycled	0.80
Hazardous Total	8.36
Solid Waste Weight (MT)- Non- Hazardous	
Incineration	18.16
Landfill	400.77
Recovery	3.76
Recycled	1,277.25
Non- Hazardous Total	1,699.94
Total Solid Waste	1,708.30
Liquid Waste Weight (MT)- Hazardous	
Incineration	189.00
Landfill	5.24
Recovery	30.00
Recycled	1.31
Reuse	1.31
Hazardous Total	226.86
Liquid Waste Weight (MT)- Non- Hazardous	
Incineration	1,159.93
Landfill	17.02
Recovery	16,464.08
Recycled	870.76
Reuse	2,392.55
Non-Hazardous Total	20,904.34
Total Liquid Waste	21,131.20

¹ 2022 is the first year of publicly quantifying waste management data.

OSHA Total Recordable Incident Rate (TRIR) (Fiscal Year October 1 to September 30)	2020	2021	2022
TRIR	2.88	2.45	3.46
Injuries	37	31	42
Hours Worked	2,572,247	2,525,864	2,578,906
OSHA Days Away, Restricted, or Transferred Rate (DART) (Fiscal Year October 1 to September 30)			
DART	2.57	1.74	2.25
Incidents	33	22	29
Hours Worked	2,572,247	2,525,864	2,578,906
Average Retail Gas Rates (per MCF)			
Bundled Retail Sales			
Residential	\$7.91	\$8.97	\$11.31
Commercial	\$7.07	\$8.11	\$10.45
Industrial	\$6.28	\$7.45	\$9.50
Total Retail	\$7.79	\$8.85	\$11.18
Transportation Sales			
Residential	\$3.99	\$4.10	\$3.88
Commercial	\$2.18	\$2.25	\$2.25
Industrial	\$0.76	\$0.77	\$0.84
Total Transportation	\$1.69	\$1.63	\$1.66

Midstream Segment

Scope 1 & 2 Emissions Intensity (kg CO ₂ e/BOE)	2020	2021	2022
Pipeline & Storage (Supply Corporation & Empire)			
Methane Emissions Intensity	2.49	1.89	2.03
Greenhouse Gas Emissions Intensity	4.82	4.33	4.41
Gathering (Midstream Company)			
Methane Emissions Intensity	2.45	2.17	2.11
Greenhouse Gas Emissions Intensity	9.01	8.38	7.87
Midstream Segment			
Methane Emissions Intensity	2.47	1.99	2.06
Greenhouse Gas Emissions Intensity	6.22	5.70	5.64
Scope 1 Greenhouse Gas Emissions (Metrics Tons CO₂e)			
Empire			
EPA Mandatory Reporting Sources	31,145	94,816	87,576
Additional EPA Sources	24,129	3,814	1,501
Other Sources	4,605	7,482	7,482
Total Empire	59,879	106,112	96,559
Supply Corporation			
EPA Mandatory Reporting Sources	288,389	256,773	277,514
Additional EPA Sources	184,517	156,643	177,252
Other Sources	10,375	10,786	14,137
Total Supply Corporation	483,281	424,202	468,903
Midstream Company			
EPA Mandatory Reporting Sources	506,979	514,740	542,873
Additional EPA Sources	8,221	12,660	11,837
Other Sources	615	665	709
Total Midstream Company	515,815	528,065	555,419
Midstream Segment			
EPA Mandatory Reporting Sources	826,513	866,329	907,963
Additional EPA Sources	216,867	173,117	190,590
Other Sources	15,595	18,933	22,329
Total Midstream Segment	1,058,975	1,058,379	1,120,882

Scope 1 Methane Emissions (Metrics Tons CH ₄ as CO ₂ e)	2020	2021	2022
Empire			
EPA Mandatory Reporting Sources	3,573	5,194	6,230
Additional EPA Sources	4,011	3,315	1,319
Other Sources	4,600	7,475	7,475
Total Empire	12,184	15,984	15,024
Supply Corporation			
EPA Mandatory Reporting Sources	111,394	96,270	119,081
Additional EPA Sources	152,378	114,826	118,065
Other Sources	7,186	7,442	10,780
Total Supply Corporation	270,958	218,538	247,926
Midstream Company			
EPA Mandatory Reporting Sources	138,582	134,962	147,321
Additional EPA Sources	1,217	1,632	1,236
Other Sources	511	526	536
Total Midstream Company	140,310	137,120	149,093
Midstream Segment			
EPA Mandatory Reporting Sources	253,549	236,426	272,632
Additional EPA Sources	157,606	119,773	120,620
Other Sources	12,297	15,443	18,791
Total Midstream Segment	423,452	371,642	412,043
Scope 2 Emissions (Metrics Tons CO₂e)			
Empire	881	1,634	582
Supply Corporation	4,738	4,490	4,400
Midstream Company	629	794	843
Total Midstream Segment	6,248	6,918	5,825

continued

Midstream Segment (continued)

Air Emissions (Metric Tons)	2020	2021	2022
Empire			
No _x	18	24	26
So _x	2	3	4
VOC	3	4	5
PM	1	2	2
Supply Corporation			
No _x	448	411	412
So _x	4	3	3
VOC	268	245	250
PM	25	14	14
Midstream Company			
No _x	317	330	355
So _x	3	3	3
VOC	91	77	91
PM	13	16	16
Midstream Segment			
No _x	783	765	793
So _x	9	9	10
VOC	362	326	346
PM	39	32	32

OSHA Total Recordable Incident Rate (TRIR) (Fiscal Year October 1 to September 30) ¹	2020	2021	2022
TRIR	0.48	0.94	1.38
Injuries	2	4	6
Hours Worked	836,072	848,934	870,090
OSHA Days Away, Restricted, or Transferred Rate (DART) (Fiscal Year October 1 to September 30)			
DART	0.24	0.71	0.92
Incidents	1	3	4
Hours Worked	836,072	848,934	870,090

¹ 2020 and 2021 values for the Midstream Segment are restated to include the Midstream Company.

Upstream Segment

Seneca

Scope 1 & 2 Emissions Intensity (kg CO ₂ e/BOE)	2020	2021	2022
Methane Emissions Intensity	2.70	2.58	1.96
Greenhouse Gas Emissions Intensity	4.37	4.32	3.67
Scope 1 Methane Emissions (Metrics Tons CH₄ as CO₂e)			
EPA Mandatory Reporting Sources	159,109	158,700	130,665
Other Sources	407	447	455
Total	159,516	159,147	131,120
Scope 1 Greenhouse Gas Emissions (Metrics Tons CO₂e)			
EPA Mandatory Reporting Sources	229,950	247,575	227,046
Other Sources	29,607	18,537	17,973
Total	259,557	266,112	245,019
Scope 2 Emissions (Metrics Tons CO₂e)	430	404	463
Criteria Pollutant Emissions (Metric Tons)			
CO	97.58	121.02	138.85
No _x	334.37	456.86	503.58
PM-10	14.07	14.77	16.25
So _x	0.62	0.81	0.82
VOC	41.78	48.93	49.04

All Non-Hazardous Waste ¹	Liquid Waste (in bbls)	Solid Waste (in tons)
Injection	284	—
Landfilled	—	97,312
Recycled	1,514	46
Reused	345,350	—
Total	347,148	97,358

¹ Waste Management values include data from both Seneca and Highland Field Services.

Highland Field Services

Scope 1 Methane Emissions (Metrics Tons CH ₄ as CO ₂ e)	2022
EPA Mandatory Reporting Sources	0
Other Sources	13
Total	13
Scope 1 Greenhouse Gas Emissions (Metrics Tons CO₂e)	
EPA Mandatory Reporting Sources	0
Other Sources	14,467
Total	14,467
Scope 2 Emissions (Metrics Tons CO₂e)	607
Highland Field Services Pollutant Emissions (Metric Tons)	
CO	127.53
No _x	96.98
PM-10	5.57
So _x	9.68
VOCs	29.05

continued

Upstream Segment (continued)

Freshwater Withdrawn and Freshwater Consumed (Thousands of Cubic Meters)	2020	2021	2022
Total Water Withdrawn	428	1,149	1,686
% of Water from Locations with High or Extremely-High Water Risk	0%	0%	0%
Total Freshwater Consumed	770	1,166	1,696
% of Water from Locations with High or Extremely-High Water Risk	0%	0%	0%
Volume of Produced Water and Flowback Generated (Thousands of Cubic Meters)			
Produced Water and Flowback	1,294	1,620	1,764
% Discharged	0%	0%	0%
% Injected	3.5%	7.4%	9.7%
% Recycled	96.5%	92.6%	90.3%
Number and Volume of Spills > 1 Bbl			
Number of Hydrocarbon Spills > 1 Bbl	0	0	0
Total Volume of Hydrocarbon Spills (in Bbls)	0	0	0
Total Volume of Hydrocarbon Spills Impacting Environmentally Sensitive Shoreline	0	0	0
Total Volume of Hydrocarbon Spills Recovered (in Bbls)	0	0	0
Number of Non-Hydrocarbon Spills > 1 Bbl	3	1	1
Total Volume of Non-Hydrocarbon Spills (in Bbls)	16	354	300
Total Volume of Non-Hydrocarbon Spills Recovered (in Bbls)	0	250	0
Total Volume of Spills Occurring in the Arctic	N/A	N/A	N/A
Total Recordable Incident Rate (TRIR)			
Full Time Employees	0.51	0	0.48
Contract Employees	0.75	1	0.51
Fatality Rate			
Full Time Employees	0	0	0
Contract Employees	0.25	0	0
Near Miss Frequency Rate (NMFR)			
Full Time and Contract Employees	7.64	7.82	2.03



Appendix C:

Independent Third-Party Verification of Emissions Data



VERIFICATION STATEMENTS FOR NATIONAL FUEL UPSTREAM, MIDSTREAM, AND DOWNSTREAM REPORTING FOR REPORTING YEAR 2020, 2021, AND 2022

National Fuel Gas Company (National Fuel) is a diversified energy company engaged principally in the onshore exploration and production, gathering, transportation, and distribution of natural gas. The Company operates an integrated business, with assets centered in Western New York and Pennsylvania. National Fuel reports their greenhouse gas (GHG) emissions pursuant to the U.S. EPA 40 CFR Part 98 Subpart W reporting requirements. National Fuel enlisted the services of Tetra Tech, Inc. (Tetra Tech) to perform a review of their reported 2020, 2021, and 2022 reporting year emissions for their Upstream, Midstream, and Downstream reporting segment processes.

The National Fuel assurance review was done by an independent third-party auditor to review submitted emissions, reporting methodology, and process flow to ensure no material misstatement or nonconformances occurred for the 2020, 2021, or 2022 reporting years. The verification body that conducted the GHG assurance review is certified by both the California Air Resources Board (CARB) and the Oregon Department of Environmental Quality (DEQ). While National Fuel is not required to comply with CARB requirements, the methodology contained with the CARB Mandatory Reporting Regulation (MRR) is robust and includes specific requirements for data review and reporting. The approach contained within the CARB MRR was utilized as guidance for the assurance review of National Fuel with the approach specifically tailored for National Fuel's reporting requirements. Tetra Tech's report presents the results of the assurance review process for the 2020, 2021, and 2022 reporting years.

The verification body has conducted a review of the submitted emissions for both the Pennsylvania and New York facilities for the 2020, 2021, and 2022 reporting years for the Upstream, Midstream, and Downstream reporting segment processes. A review of raw data utilized to calculate these submitted emissions, backup documentation, prepared Monitoring Plans, data management systems, and site interviews with key reporting National Fuel staff was conducted. Additionally, the verification body reviewed National Fuel's Corporate Responsibility Reports. The reports detailed the Upstream, Midstream, and Downstream processes and discussed all aspects of National Fuel's impact, from GHG emissions to biodiversity impacts. During the verification process, all questions and issues were reviewed and discussed with National Fuel, and all issues were closed out.

Per the CARB MRR, "material misstatement" means any discrepancy, omission, or misreporting, or aggregation of the three, identified in the course of verification services that leads a verification team to believe that the total reported covered emissions (metric tons of CO₂e) or reported covered product data contains errors greater than 5%, as applicable, in an emissions data report. Additionally, "nonconformance" means the failure to use the methods or emission factors specified in this article to calculate emissions, or the failure to meet any other requirements of the regulation.

The verification body has found the submitted emissions reports free of material misstatement. In addition, the verification body also attests that the National Fuel reports conform to the requirements of the regulation.

Certified by:

Erica Alvarado, D.Env., M.P.H.
CARB and OR DEQ Accredited Greenhouse Gas Lead Verifier with Oil & Gas and Transactions Specialties

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National Fuel

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