







2020 CORPORATE RESPONSIBILITY REPORT

National Fuel

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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 or 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, 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
DOT	United States Department of Transportation
EPA	United States Environmental Protection Agency
FERC	Federal Energy Regulatory Commission
NTSB	National Transportation Safety Board
NYPSC	New York Public Service Commission
NYSERDA	New York State Energy and Research Development Association
PADEP	Pennsylvania Department of Environmental Protection

PaPUC	Pennsylvania Public Utility Commission
PHMSA	Pipeline and Hazardous Materials Safety Administration
OSHA	Occupational Health and Safety Organization
SEC	Securities and Exchange Commission

Other

AGA	American Gas Association
API	American Petroleum Institute
AXPC	The American Exploration and Production Council
BAT	Best available technology
Bbl	Barrel (of oil)
Bcf	Billion cubic feet (of natural gas)
Bcfe (Mcfe) – represents Bcf (or Mcf) equivalent	The total heat value (Btu) of natural gas and oil expressed as a volume of natural gas. The Company uses a conversion formula of 1 barrel of oil = 6Mcf of natural gas.
BMP	Best management practice
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.
CCAA	Nationwide Candidate Conservation Agreement with Assurances
CCUS	Carbon capture utilization and storage
CIP	Conservation Incentive Program
CIPA	California Independent Producers Association
CISSC	Corporate Information Security Steering Committee
CLCPA	New York Climate Leadership and Community Protection Act, or Climate Act
Code	Company's Code of Business Conduct
COVID-19	Novel coronavirus
CQMS	Construction Quality Management System
DIMP	Distribution Integrity Management Program
EDM	Engineering Design Manual
EHS	Environmental, health and safety
EIA	United States Energy Information Administration
EMS	Environmental Management System

ERM	Enterprise Risk Management
ESCAMP	Erosion and Sedimentation Control and Agricultural Mitigation Procedure
ESA	Environmental Site Assessment
ESG	Environmental, social, and governance disclosures
GHG	Greenhouse Gas
GHGRP	United States EPA's Greenhouse Gas Reporting Program
GRI	Global Reporting Initiative
HCA	High consequence area
HFCs	Hydrofluorocarbons
IFC	International Finance Corporation
ILO	International Labor Organization
InfoSec	Information security
INGAA	Interstate Natural Gas Association of America
IPCC	Intergovernmental Panel on Climate Change
LDAR	Leak Detection and Repair
LIHEAP	Low Income Home Energy Assistance Program
LIURP	Low Income Usage Reduction Program
LPP	Leak prone pipe
MAOP	Maximum allowable operating pressure
MFC	Merchant Function Charge
MSC	Marcellus Shale Coalition
Mmbtu	One million British thermal units
MMcf	One million cubic feet
NGSI	National Gas Sustainability Initiative
NMFR	Near-miss frequency rate
NRCIP	Non-Residential Rebate Program
PFCs	Perfluorocarbons
PM_{10}	Particulate matter
PNDI	Pennsylvania Natural Diversity Inventory

PNHP	Pennsylvania Natural Heritage Program
PSE	Process safety event
PSMS	Pipeline Safety Management Systems
PPE	Personal protective equipment
PRT	Pandemic Response Team
RACT	Reasonably Available Control Technology
RCA	Root Cause Analysis
RDM	Revenue Decoupling Mechanism
ROW	Right-of-way
RNG	Renewable Natural Gas
RP	Recommended Practice
SASB	Sustainability Accounting Standards Board
SME	Subject Matter Expert
SMS	Safety Management System
STIMP	Storage Integrity Management Program
T&E	Threatened and endangered
TCFD	Task Force on Climate-Related Financial Disclosures
TIMP	Transmission Pipeline Integrity Management Program Plan
TRIR	Total recordable incident rate
VOC	Volatile organic compound
WNC	Weather normalization clause
WEO	World Energy Outlook

National Fuel

Letter to Stakeholders

Dear Stakeholder,

Thank you for taking the time to read National Fuel Gas Company's 2020 Corporate Responsibility Report ("Report"), which highlights the Company's ongoing initiatives to ensure the long-term sustainability of our business and our focus on corporate citizenship in the communities in which we operate.

I am proud of the efforts and achievements of National Fuel's 2,100 hardworking and dedicated employees over the past year to further enhance our sustainability practices, particularly against the backdrop of the COVID-19 pandemic. Across our footprint in New York, Pennsylvania, California, and Texas, our employees are committed to our corporate guiding principles of safety, environmental stewardship, community, innovation, satisfaction, and transparency. By embracing these core values each and every day, National Fuel continues to play a meaningful role within our communities.

Our Commitment to Continuous Improvement

National Fuel is focused on continuous improvement in all aspects of our business, including our environmental, social, and governance ("ESG") initiatives and disclosures. In this regard, and in response to discussions with the Company's key stakeholders, our 2020 Report includes significant additional disclosure related to climate risk in line with the Task Force on Climate-Related Financial Disclosure ("TCFD") framework. This framework analyzes governance surrounding climate-based risks and opportunities, strategies for addressing such factors, risk management considerations, and metrics and targets which can be used to assess those factors.

Our Emissions Reduction Targets

Exploration & Production

40% reduction in methane intensity by 2030

Gathering

30% reduction in methane intensity by 2030

Consolidated Company

25% reduction in total GHG emissions by 2030

Pipeline & Storage

50% reduction in methane intensity by 2030

Utility

30% reduction in methane intensity by 2030

75% reduction in delivery system GHG emissions by 2030 (1990 baseline)

90% reduction in delivery system GHG emissions by 2050 (1990 baseline)

Additionally, National Fuel remains focused on reducing our carbon footprint. In March, our Utility announced greenhouse gas ("GHG") emissions reduction targets for its delivery system of 75% by 2030 and 90% by 2050, both from 1990 levels, in line with New York's CLCPA initiative. The targets rely on our commitment to the continued modernization of our utility infrastructure, which to date has led to a reduction in EPA subpart W emissions of well over 60%.

While we started with our Utility delivery system, in connection with the Company's enhanced climate-focused disclosures and ongoing efforts to lower our carbon footprint, National Fuel has established significant methane intensity reduction targets at each of our businesses, as well as an absolute GHG emissions reduction target for our consolidated Company, each using a 2020 baseline.

In developing these targets, we evaluated and assumed the implementation of tangible, concrete, emissions reductions initiatives at each of our businesses, and forecasted related improvements to our emissions profile. Additionally, in the development of methane intensity targets, we did not rely on future technological advancements, an approach that we feel is distinguishable from many of our peers. We believe our practical, science-based approach to be the most appropriate at this point in time, and will evaluate opportunities to further reduce our emissions as technology develops.

In this regard, we are keenly focused on the potential incorporation of low and zero-carbon fuel into our transmission and delivery infrastructure, as well as the potential sequestration of carbon. The continued development of these technologies will be critically important to the achievement of a net-zero economy. In addition to our participation in energy technology-development groups such as the Low Carbon Resources Initiative, National Fuel has established internal cross-functional teams, led by our Energy Transition Steering Committee, to study the feasibility and potential development of projects focused on renewable natural gas ("RNG"), hydrogen, and carbon capture utilization and storage ("CCUS").

We are hopeful that these technologies will become more cost effective and scalable in the coming years, and will play a meaningful role in the further decarbonization of the energy value chain. When combined with our ongoing efforts to reduce our emissions across each of our businesses, we are optimistic that National Fuel, and the natural gas industry, can achieve a common goal of reaching net-zero in line with the aspirations of the Paris Agreement.

Our Important Role in the Energy Transition

As a company with a nearly 120 year track record of successfully operating assets that span the entirety of the natural gas value chain, our business has evolved numerous times over the past several decades to address both market-driven and regulatory changes across the energy landscape. Today, the natural gas industry, and the energy eco-system as a whole, are in the midst of another significant transformation, as states, regions, and countries around the world push aggressively toward a lower carbon economy.

In this regard, across the United States, federal and state policy makers are moving swiftly to transition the nation's energy supply towards renewable resources. We acknowledge the importance of reducing carbon emissions. However, in many instances, this transition is occurring rapidly with limited consideration of, and responsiveness to, the need for ongoing energy resilience and the importance of long-term energy equity – two key topics that must remain front and center.

The events that transpired during February's superstorm Uri in Texas and the Midwest serve as a reminder of the need for an "all of the above" energy strategy that includes proper planning to ensure the stability and resilience of energy delivery systems and continued access to affordable energy supplies. These considerations are particularly important within National Fuel's

Core Elements of the Task Force on Climate-Related Financial Disclosures

Governance

The organization's governance around climate-related risks and opportunities

Strategy

The actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning

Risk Management

The processes used by the organization to identify, assess, and manage climate-related risks

Metrics and Targets

The metrics and targets used to assess and manage relevant climate-related risks and opportunities

operating territory, where the low temperatures that crippled Texas for just a few days are the norm for the three coldest months of the winter, and the median household income is below the national average. Looking at these critical issues through this lens, it becomes readily apparent that there will be a long-term need for reliable, weather-hardened infrastructure to cost-effectively serve the energy needs of our region.

I firmly believe that natural gas, and our resilient and safely operated pipeline delivery network, will remain an important part of the energy solution. In March, we published our Utility's "Pathways to a Low Carbon Future" report, which demonstrates that natural gas and its associated infrastructure can, in fact, have a significant role in a low carbon world. The report, which was developed using the findings of a study performed by Guidehouse, an independent consulting firm, evaluated scenarios for meeting New York State's aggressive decarbonization targets, focusing on the interplay of energy efficiency, electrification, hybrid heating solutions and low carbon fuels to leverage existing utility infrastructure and provide cost efficient solutions. The study validates that by focusing policy on an all of the above carbon reduction approach, we can achieve significant decarbonization that meets emissions goals while preserving access to low cost, reliable and resilient energy for consumers. We will remain focused on these core tenets as we further develop our assets in the years ahead.

"I firmly believe that natural gas, and our resilient and safely operated pipeline delivery network, will remain an important part of the energy solution."

Our Sustainable Future

As we look forward, National Fuel expects to continue to advance its emissions reduction initiatives while enhancing its climate focused disclosures. Over the next year, the Company plans to publish further analysis of the resilience of our business to a lower carbon economy, in line with the TCFD framework. We recognize the importance of this information to our stakeholders, and have identified the completion of this analysis as a key ESG priority.

National Fuel will also maintain our focus on fostering a diverse, equitable, and inclusive work environment, an attribute that we view as critical to our long-term success. To spearhead these efforts, in 2020, the Company appointed a Director of Diversity and Inclusion, who has been tasked with leading a number of diversity and inclusion initiatives throughout our organization, along with cultivating the Company's relationships with community organizations, and focusing on initiatives to attract and retain diverse candidates, vendors, and other partnerships. Likewise, earlier this year, our Board of Directors updated the Company's Corporate Governance Guidelines to incorporate the "Rooney Rule." In 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.

Additionally, in line with our guiding principal of transparency, in this Report, the Company has included workforce diversity disclosures in line with the federal EEO-1 reporting framework. As we aim to improve these workforce diversity metrics in the coming years, we have implemented specific performance goals for our fiscal year 2021 as part of the Company's Annual at Risk Compensation Incentive Plan for executive compensation, including diversity and inclusion goals for each executive officer.

Furthermore, safety remains a top priority that underpins all aspects of our operations, and we will continue our long-standing commitment to building and maintaining a robust safety culture. This includes adhering to operating practices that safeguard our employees, our customers, and the communities that we serve each and every day. In 2020, National Fuel's Utility and Pipeline & Storage businesses experienced a collective 35% reduction in OSHA recordable injuries versus the prior fiscal year, while our Exploration & Production business saw a similar 31% decrease, an indication of the Company's continued efforts to enhance our safety culture. Our focus on safety is a collective commitment across our organization and is an area in which we will pursue ongoing improvement.

Fostered by our safety-first culture and our commitment to best-in-class operational performance, National Fuel is well-positioned to advance our corporate responsibility initiatives in the coming years, while achieving strong financial results for our investors. I look forward to reporting on our continued progress on these initiatives in the years ahead.

David P. Bauer
President and Chief Executive Officer -

National Fuel

Executive Summary

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, 2020, 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, Upstream, and Midstream 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 Frameworks	**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 • 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 2020 Corporate Responsibility Report further enhances past disclosures with a focus on: • Climate-related risks and opportunities • Risk management • Emissions profile and targets • Diversity, Equity and Inclusion • Internal audit review prior to publication

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, storage, and distribution of natural gas in the United States. 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 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. Utility activities deliver natural gas to residential, commercial, and industrial end users within the Company's service territories. 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, gather, and transport natural gas from the Appalachian basin to markets in the eastern United States and Canada. The Company also develops and produces oil reserves, primarily in California. The Company owns directly or indirectly all of the outstanding securities of its subsidiaries, which are represented in the Downstream, Midstream, and Upstream operating segments.

Downstream

The Company's utility operations are carried out by National Fuel Gas Distribution Corporation ("Distribution Corporation" or "Downstream Segment"), a New York corporation. Our Downstream Segment provides natural gas utility services to over 2 million residents in Western New York and northwestern Pennsylvania through a local distribution system. The principal metropolitan areas served by Distribution Corporation include Buffalo, Niagara Falls and Jamestown, New York and Erie and Sharon, Pennsylvania.

Midstream

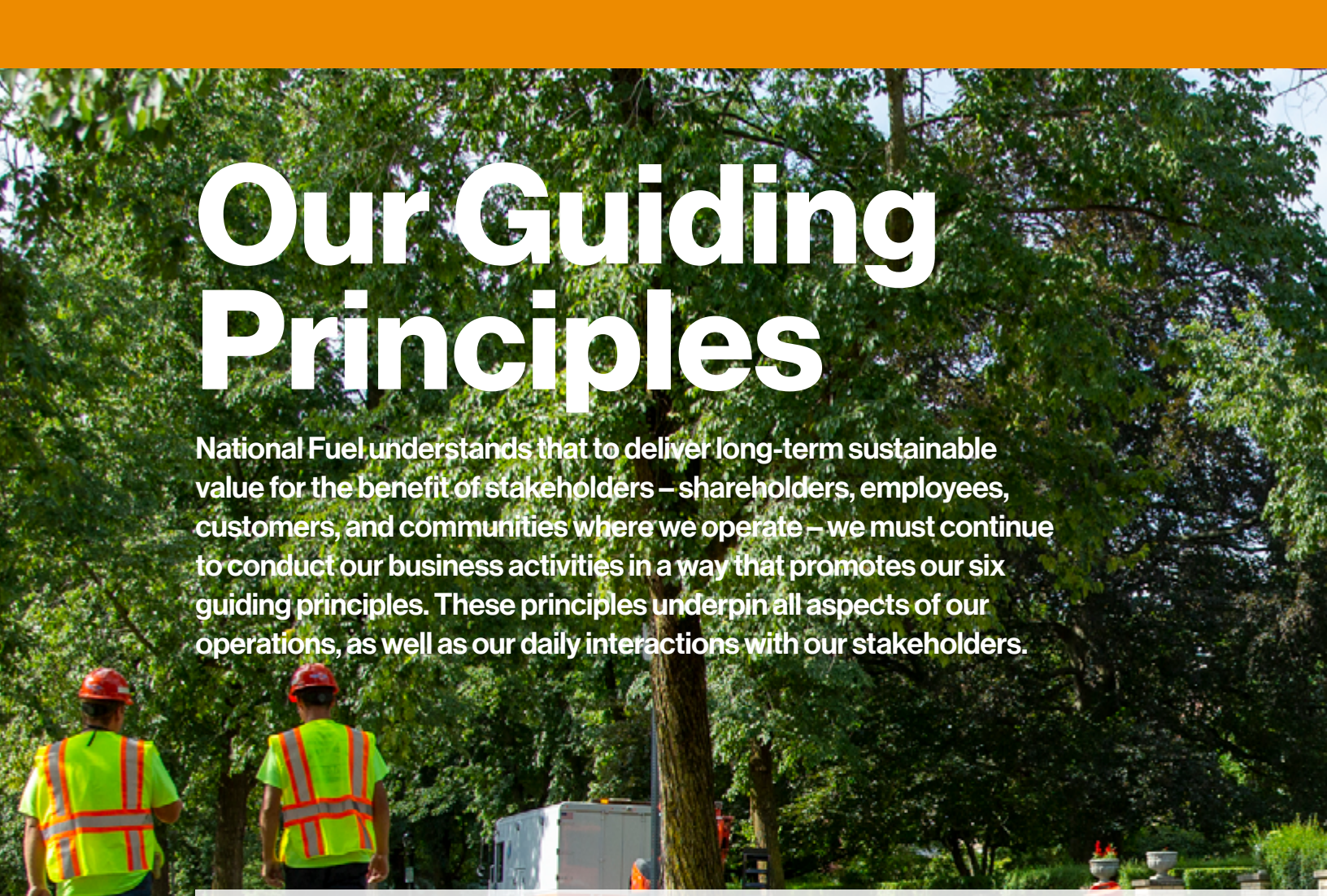
The Company's midstream operations are carried out by the Company's Pipeline & Storage and Gathering subsidiaries (collectively the "Midstream Segment"). Our Pipeline & Storage operations are carried out by National Fuel Gas Supply Corporation ("Supply Corporation"), a Pennsylvania corporation, and Empire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

Upstream

Our exploration and production operations are carried out by Seneca Resources Company, LLC ("Seneca" or "Upstream Segment"), a Pennsylvania limited liability company. Seneca is engaged in the exploration for, and the development and production of, natural gas and oil reserves in the Appalachian region of the United States and in California.

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.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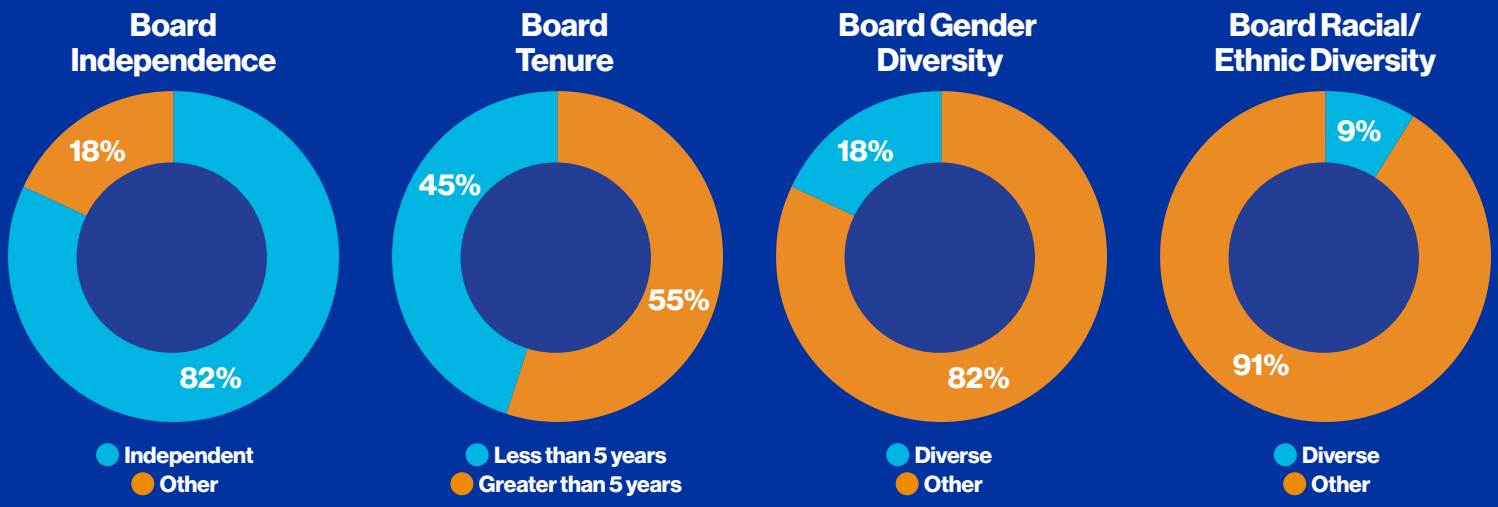
National Fuel

Governance and Risk Oversight

Diverse and Independent Board of Directors[1]



The Company's strong corporate governance measures go hand-in-hand with our guiding principles of satisfaction and transparency. National Fuel 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 uphold those shareholder interests, and the Board and Company management recognize that the long-term interests of stockholders are served by considering the interests of customers, employees and the communities in which we operate. The Company's Board of Directors consists of eleven individuals (nine of which are independent) with extensive and diverse leadership experience and backgrounds. The board has also designated a lead independent director and separated the roles of Chairman of the Board and Chief Executive Officer.

Strong Corporate Governance Practices

Our Diverse, Experienced and Independent Board of Directors

The Company's Board of Directors consists of individuals with extensive and diverse leadership experience within the energy industry, as well as complementary industries, including manufacturing and consulting. 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.

1 The graphs reflect the current makeup of the Company's Board of Directors as of the initial publication date of this Report in September 2021. 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.

National Fuel's commitment to diversity also extends to our Board of Directors. In recent years, National Fuel's Nominating/Corporate Governance Committee, which makes recommendations to the full Board on nominees for director positions, has invited qualified diverse candidates to stand for election to the Board, with successful results. Additionally, Board member Rebecca Ranich serves as Chair of the Nominating/Corporate Governance Committee and women have long occupied many of National Fuel's top corporate levels as described in the *Female Leadership* section. The Board will continue its efforts to attract qualified diverse Board Candidates whose expertise and personal characteristics align with the Company's long term business strategy. It is important to note that 3 of the last 6 directors who were added to the Board are diverse.

In 2021, the Board updated the Director Qualifications Guidelines, contained in the Company's Corporate Governance Guidelines, to clarify that "diversity of perspectives" includes all aspects of diversity, including, but not limited to, race, ethnicity, national origin and gender. The Board also updated the Nominating/Corporate Governance Committee's Process for Identifying and Evaluating Nominees for Director to include a commitment that the Nominating/Corporate Governance Committee will, when identifying and evaluating new candidates for election to the Board, include qualified racially, ethnically and/or gender diverse candidates in any initial board candidate pool when considering director candidates for nomination to the Board.

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"). 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.

Managing Business Ethics Internally

All employees share the responsibility for making ethical conduct central to our business operations and dealings. The Code applies to the Company's directors, principal executive officer, principal financial officer, controller, other officers and employees. The Code is designed to deter wrongdoing and to promote honest and ethical conduct. 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 also has an Employee Handbook Policy relative to the Code that explains and elaborates on what is expected of all employees to comply with the Code. The Employee Handbook, among other things, outlines Company policies relating to compliance with laws, rules and regulations on the following topics:

- Insider trading;
- Improper corporate payments, bribes, kickbacks, and/or gifts;
- Political contributions;
- Equal employment opportunity;
- Non-discrimination and anti-harassment;
- Health and safety;
- Environmental compliance; and
- Data privacy and cybersecurity.

Annually, all National Fuel 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 ("Annual Ethics Disclosure"). Additionally, officers and employees are reminded through their Annual Ethics Disclosure that they may use the 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 2020, the hotline received eight reports, which included five test reports conducted in conjunction with an upgrade by the hotline provider. External benchmarking was performed to evaluate the number of reports received annually, which indicated that National Fuel is consistent with other companies. In addition to the Annual Ethics Disclosures, the Company requires employees to undergo additional ethics and compliance training with respect to conducting business with government officials.

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 Code of Vendor Conduct, National Fuel's Labor & Human Rights Guidelines, as well as other procurement guidance from 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 Vendor 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 employees of National Fuel 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.

Additionally, as part of National Fuel's commitment to promoting responsible business operations, the Company expects its suppliers, vendors and contractors to conduct business with integrity and in accordance with the Company's Code of Vendor Conduct. 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. The Code of Vendor Conduct is not all inclusive, but provides guidelines for business partners to follow and serve as an overview of National Fuel's expectations for all those who do business with the Company. Among other things, the Code of Vendor Conduct addresses the Company's expectations with respect to the following:

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

Governance – Political Advocacy

As part of National Fuel's ethical and integrity driven culture, 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 policy makers can directly impact all aspects of the Company's operations. National Fuel advocates for policies to our business 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, and political expenditures.

Governance – Information Security

National Fuel believes that a strong information security program is critical to the Company's success and therefore is committed to continuously reevaluating and strengthening the Company's cyber security 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. The CISSC is led by the Company's Chief Information Officer (CIO) and 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 and training to personnel, 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 leadership to discuss information security issues.

Information Security Focus	Company Initiatives
Training	• All employees with user access, and contractors with unsupervised system access to Company systems, complete annual information security training • InfoSec provides additional training to high-value targets
External Audits	• Annually engages FireEye Mandiant, an independent third party cybersecurity consultant, to assess aspects of Company technology • Voluntarily participated in one-off assessments focused on different information security issues performed by various U.S. federal agencies: - Cybersecurity and Infrastructure Security Agency - Transportation Security Administration - Department of Homeland Security - Federal Energy Regulatory Commission • Annually perform NYPSC review of third party attestation as it relates to Case 13-M-0178 (protection of personally identifiable customer information)
Information Security Breaches	• 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 three years • Maintains contracted relationship with forensic investigation, crisis communications, credit monitoring and legal service providers in the event of a breach • Conducts annual table top drill to test our Information Security Incident Response Plan and Procedures • Maintains cybersecurity liability insurance

National Fuel periodically reevaluates the cyber security program and roadmap to assess that planned initiatives are appropriate for the ever changing threat landscape, and to ensure defense in depth.

TCFD Disclosure

Based on engagement with and commentary from its key stakeholders, including its principal shareholders, the Company has elected to implement recommendations of the TCFD, in addition to the applicable SASB standards disclosed for its Downstream, Midstream and Upstream Segments in the Report. The Company has aligned our climate-related risk reporting with the four central themes of the TCFD – Governance, Strategy, Risk Management, and Metrics and Targets.

Building on our sustainability governance and risk oversight disclosures, National Fuel has enhanced its climate-risk disclosure in this 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 enterprise risk management process, and 4) disclosing metrics and targets related for each of our business segments.

Governance of Corporate Responsibility and Sustainability

The Board's structure and responsibilities are outlined in the Company's Corporate Governance Guidelines. Individual committees offer expertise and oversight on specific environmental, social and governance factors.

Committee	ESG Factor Overview
Audit	• Financial Statement Integrity • Internal Control Systems • Audit Processes • Enterprise Risk Management Process[1]
Compensation	• Compensation Philosophy and Practices • Executive Compensation tied to ESG metrics
Nominating/Corporate Governance	• 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. The Nominating/Corporate Governance Committee is responsible for overseeing and providing guidance concerning the Company's practices and reporting with respect to corporate responsibility and ESG factors that are of significance to the Company and its stakeholders. All directors are invited to attend the Nominating/Corporate Governance Committee meetings, which permits the entire Board to have input on the ESG matters discussed.

Organizational responsibility 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, which is made up of the Company's senior executive team and our Vice President of Corporate Responsibility.

1 The Enterprise Risk Management ("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.

Our Governance of Sustainability

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<tr><td colspan="5">Nominating/Corporate Governance Committee
Oversees and provides guidance of Corporate Responsibility and Sustainability initiatives, strategies and decision-making.</td></tr>
<tr><td colspan="5">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.</td></tr>
<tr><td colspan="5">Vice President of Corporate Responsibility
Executive responsible for corporate responsibility disclosure and advancing the Company's sustainability agenda.</td></tr>
<tr><td rowspan="2">Director of Corporate Responsibility
Responsible for identifying improvement opportunities and enhancing Company disclosure.</td><td colspan="4">Corporate Responsibility Management Committee
Responsibility for prioritizing progression of corporate responsibility and sustainability agenda in specific SME areas, as well as updating Company disclosures.</td></tr>
<tr><td>Governance and Risk Management SMEs</td><td>Human Capital Development SMEs</td><td>Health and Safety SMEs</td><td>Emissions and Air Quality SMEs</td></tr>
<tr><td colspan="5">All Leaders
Responsible for leading team efforts on corporate responsibility and sustainability initiatives.</td></tr>
</table>

Climate-Related Strategy

The Company recognizes the ongoing developments and risks surrounding climate change, as well as the corresponding opportunities. 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.

Our short-term time horizon is one year, during which we consider near-term risks to project planning and completion, low commodity prices and continuing shifts in stakeholder and government policy the most impactful risks. The climate-related risks for medium-term and long-term time horizons that have the potential to be the most impactful for the Company are summarized on the following page.

Medium-Term Risks

- **Policy and Regulatory Changes:** As further described in the *Management of the Environmental and Legal Regulatory Environment* section, regulatory changes at the federal, state, and/or local levels could 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 and Oil:** Demand for fossil fuels could decrease through renewable energy adoptions and subsidization, which could lead to decreased revenues, or the inability to recover the Company's financial investment in plant.

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 moratorium(s) on natural gas; increased restrictions on certain operating practices; and cap-and-trade, severance tax and/or carbon tax implementation.

- **Financial Counter party 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)**

Climate-Related Risks and Potential Impacts

The Company considers climate-related risks as part of its enterprise risk management process, which ultimately informs corporate strategy and the capital spending decision process. The Company's process for identifying, assessing and managing climate-related risks is described in greater detail in the *Risk Management* section.

The TCFD identifies two categories of climate-related risks – physical risks and transitional 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).

TCFD Physical Risks

Climate-Related Physical Risks	Risk	Potential Impact
Acute	More frequent and severe weather events	• Business interruption or system shutdown leads to reduced revenues • Increased costs for operational damage that are unrecoverable • Increased insurance premiums
Chronic	Long-term shift in climate patterns resulting in new storm patterns or chronic increased temperatures	• Decreased revenues as a result of warmer weather/less degree days • Supply chain disruption

Transitional risks are those risks that arise from a transition to a lower-carbon economy. Transitional risks include:

- Policy and legal risks from regulation, legislation and litigation.

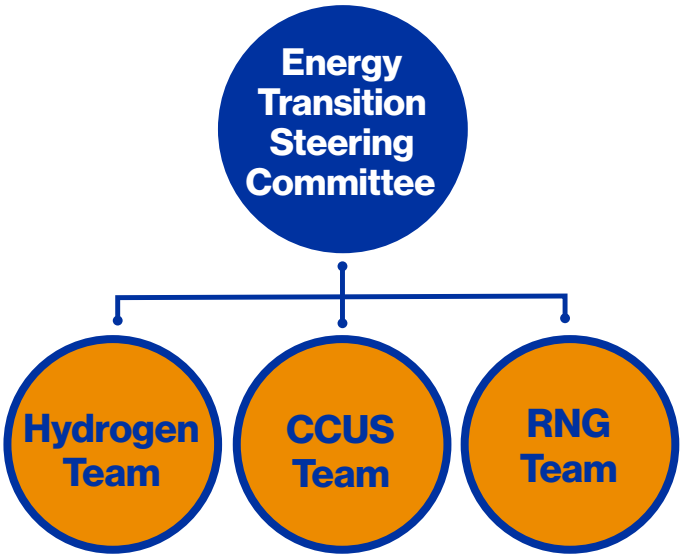
- Technology risks from improvements or innovations that support decarbonization.

- Market risks from shifts in supply and demand for fossil fuels.

- Reputational risks from changes in customer and community perceptions and behaviors.

TCFD Transitional Risks

Climate-Related Transitional Risks	Risk	Potential Impacts
Policy and Legal	**Regulatory and Legislative Initiatives** • 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 oil or natural gas wells **Political Risks Associated with Climate Pledges** • Regional or statewide moratoriums • 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**	• 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 and oil • Production curtailment and related revenue impacts • Decreased revenues • Inability to recover financial investment in plant • Limits pool of potential investors to finance growth • Access to and cost of capital negatively impacted • Increased insurance premiums • Increased shareholder activism leads to increased costs • Prolonged project timelines and increased construction costs • Limits growth opportunities • Impact on stock price
Technology	• Decreased natural gas and oil demand due to renewable energy adoption / technology developments	
Markets	• Shifts in supply and demand for fossil fuels	
Reputation	• 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	



Climate-Related Opportunities

Natural gas has played a pivotal role to date in decarbonizing our economy, driving significant reductions in regional and national greenhouse gas emissions over the past decade. The Company believes that natural gas will continue to remain an important part of the future energy solution as the economy moves toward decarbonization, with continued coal plant retirements and conversions from heating oil to natural gas. 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
- Treasurer of the Downstream and Midstream Segments

The Company has also developed specific teams made up of technical, regulatory and business development subject matter experts focused on hydrogen, CCUS, and RNG. 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	• Modernize existing equipment to minimize emissions • Install low-emissions technology on new facilities • Minimize freshwater consumption and usage • Promote customer efficiency • Use more efficient distribution and production processes
Energy Source	• Leverage alternative energy sources and efficiency initiatives to reduce the Company's energy usage
Products and Services	• Leverage our existing infrastructure to transport renewable natural gas • Explore alternative low-carbon fuel sources, such as blue and green hydrogen • Explore carbon capture utilization and storage opportunities
Markets	• Access to capital for best-in-class ESG performers • Access to markets seeking responsibly sourced natural gas production
Resilience	• Improved efficiencies for natural gas development and gathering operations within contiguous acreage position

Resiliency

As one of the Company's six guiding principles, the Company prioritizes transparency when engaging with its stakeholders, including investors. National Fuel's management

team communicates with our principal investors to obtain feedback on matters of interest to them, including corporate responsibility and sustainability. As such, the Company understands that scenario analysis is an important aspect of its climate-risk disclosures, as outlined in the TCFD. As part of our commitment to continuous improvement, the Company plans to publish scenario analysis in a future report.

Additionally, the Company commissioned a study, which was published by Guidehouse Inc. in March 2021, assessing the New York's Climate Leadership and Community Protection Act's ("CLCPA" or Climate Act") impacts on New York's energy system and communities, including our New York utility service territory. The Guidehouse study, Meeting the Challenge: Scenarios for Decarbonizing New York's Economy, evaluated scenarios for meeting the state's 2050 GHG emission reduction goal, focusing on the interplay of energy efficiency, electrification, hybrid heating solutions and low-carbon fuels to leverage existing utility infrastructure and provide cost-efficient solutions.

Risk Management
SASB EM-EP-540a.2

Risk Identification and Assessment

The Company's Board of Directors retains oversight of enterprise risk management, including areas central to corporate responsibility and climate-related risks. An important aspect of the Board's oversight role is the ERM process, which is managed internally by an ERM Team and led by the Company's General Counsel. The ERM Team works with senior management to facilitate the identification, assessment, management and monitoring of risks within the major categories of strategic, financial, operational, safety and regulatory risks. Within these major risk categories, the Company also identifies physical and transitional risks and their potential financial impact under the TCFD sub-categories listed above. For this purpose, the Senior Management Team consists of the following:

- President and Chief Executive Officer
- Chief Operating Officer
- Presidents of the Company's primary subsidiaries
- Principal Financial Officer
- Principal Accounting Officer
- Chief Information Officer
- General Counsel

To identify critical and potentially-emerging risks, each member of the senior management team meets with business unit leaders, business segment officers and/or department heads in their individual subsidiaries or functional areas of responsibility, to identify and provide an initial assessment for segment specific and/or functional area specific risks. The senior management team then discusses the identified risks and develops a list of the most prominent risks, both on a consolidated basis and by segment. 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/mitigative 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).

"We are committed to continuously improving our corporate responsibility and sustainability initiatives, including our ESG disclosures, to build long-term sustainable value for our stakeholders."

Jeff Hart
Vice President of Corporate Responsibility

Based on the analysis of this criteria, the senior management team assesses the significance of the identified risks to the Company. Risks are labeled 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 a 1-year, 5-year and 20-year basis.

- **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 five-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 five-year assessment.

In addition, the senior management team identifies foundational risks that are overarching risks that the Company regularly monitors and works to mitigate. Each identified critical risk feeds into one of these foundational risks. For those identified as critical risks, a more detailed narrative of the risk, outstanding items of interest taken into consideration when assessing that risk, and the current mitigative measures for that risk are provided.

On a periodic basis, the senior management team reviews the foundational, critical and potentially-emerging risks and discusses and determines, 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, during which the Directors provide input on risk identification and assessment. Additionally, management provides a detailed presentation on a topic related to one or more risks at each regularly-scheduled Board meeting. Additional review or reporting on these enterprise risks is conducted as needed or as the Board requests.

Management of the Environmental Legal & 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 and oil industries are subject to regulatory requirements that are incredibly strict and rigorous 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 above, as well as in the Company's periodic filings with the federal Securities and Exchange Commission.

As indicated in the *Climate-Related Risks and Potential Impacts* 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 gas and oil. Listed below are different state requirements within our operating territories that could affect the Company's operations, and therefore are considered during the enterprise risk management process.

- **California:** Cap-and-trade guidelines, and increased permitting lead times which could increase the Company's cost of environmental compliance in its Upstream Segment.

- **New York:** The Climate Act, which created emissions reduction and electric generation mandates, and could impact the Downstream Segment's customer base and inhibit the Midstream Segment's ability to develop new projects or facilities.

- **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.

Legislation or regulation that aims to reduce greenhouse gas emissions could also include greenhouse gas 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 enterprise risk management process and for reviewing the effectiveness of corporate strategy in prioritizing, addressing, and mitigating critical risks, including those climate risks related to sustainability. 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 the 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. The most impactful climate-related risks for each time horizon are listed above.

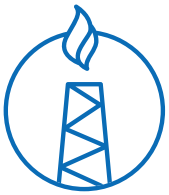
Metrics and Targets

As part of the Company's initial TCFD disclosure, it evaluated key metrics and developed targets to measure and monitor the Company's performance and progress in the future in managing climate-related risks and opportunities. The Company believes that these targets best align with our strategy and risk management process:

- Methane Intensity Reduction Targets at each of our businesses

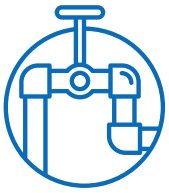
- GHG Emissions Reduction Target for the consolidated Company

The Company believes that these metrics and targets are the most useful in managing climate-related risks and opportunities. More information pertaining to the Company's greenhouse gas 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.



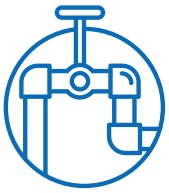
Exploration & Production

40% reduction in methane intensity by 2030



Gathering

30% reduction in methane intensity by 2030



Pipeline & Storage

50% reduction in methane intensity by 2030

Consolidated Company

25% reduction in total GHG emissions by 2030

Utility

30% reduction in methane intensity by 2030

75% reduction in delivery system GHG emissions by 2030 (1990 baseline)

90% reduction in delivery system GHG emissions by 2050 (1990 baseline)


fuel
for a

National Fuel

Our Employees and Communities

The ongoing success of National Fuel and its subsidiaries is the direct result of our employees', and before them our retirees', hard work and dedication. National Fuel employs over 2,100 full-time employees across its Western New York, western Pennsylvania, California and Houston, Texas locations. The Company prides itself on being a local employer that never compromises its integrity and commitment to the Company's guiding principles. To address the social risks inherent in any workplace, the Company has developed a robust compliance program and set of policies designed to create a safe, inclusive and productive work environment. That program includes, among other things:

- **Labor and Human Rights Guidelines**: 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.

- **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.

- **Safety Culture:** The Company has implemented numerous safety programs and management practices to ensure a culture of safety is prioritized and embraced throughout the whole organization. See *Integrity of Gas Delivery Infrastructure*, *Operational Safety, Emergency Preparedness & Response*, and *Workforce Health & Safety* for more information related to the Company's safety programs and management practices.

Human Capital – Labor Practices

National Fuel respects its employees' right 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, 2020, 48.5% of the Company's active workforce was covered under collective bargaining agreements. During calendar year 2020, National Fuel did not incur any work stoppages (strikes or lockouts) and therefore experienced zero idle days for the year.

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.

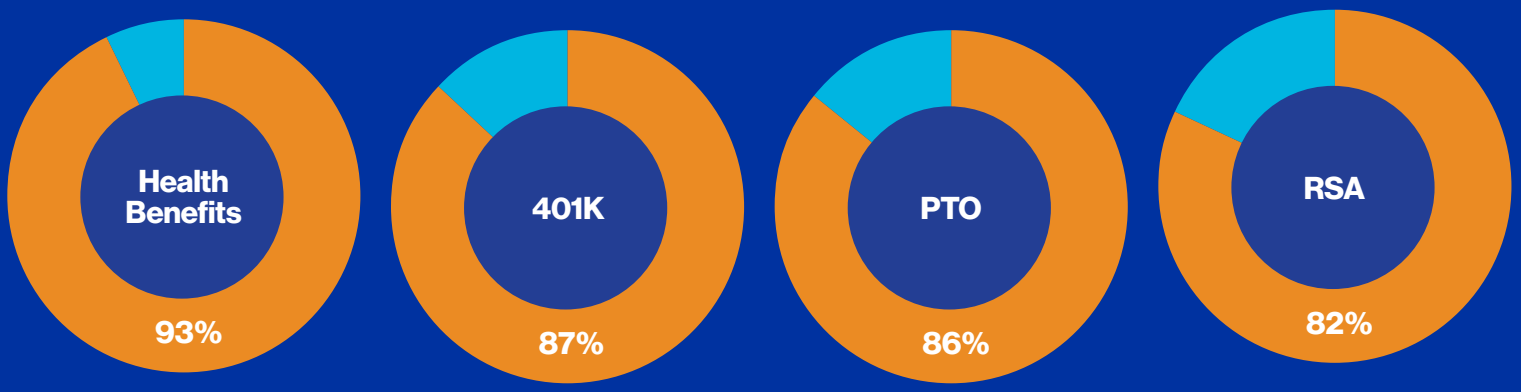
In 2021, the Company created an Employee Referral Program for its Midstream and Downstream Segments that offers bonus incentives to referring employees if their referral gets hired. The Company believes that this program will help identify talented people as part of the recruitment process, and reflects referring employees' endorsement of the Company's culture and workforce development.

Employee Benefits

To attract employees and meet the needs of our workforce, National Fuel offers a robust benefits package at all of our subsidiaries. Our benefits package options may vary depending on type of employee (full-time versus part-time) and date of hire. Additionally, the Company continuously looks for ways to improve employee work-life balance and well-being.

The Company's Benefit Programs

As a result of the Company's continued Employee Engagement efforts, employees surveyed in 2021 showed the following satisfaction rates with the Company's benefit programs:



Our Employee Benefits

Healthcare	Insurance	Financial	Lifestyle
• Medical and prescription drug • Dental • Vision	• Life insurance • Accidental death and disability • Short-term disability • Long-term disability • Optional life insurance • Business travel accident	• 401(k) retirement savings account ("RSA") with matching company contribution • Company funded retirement savings account • Flexible spending account for medical care reimbursement • Flexible spending accounts for daycare and adoption expenses	• Paid time off ("PTO") • Tuition aid program • 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 Development

National Fuel is only as strong as the human capital that we retain and develop. The Company provides employees with the tools and developmental resources to enhance their skills and careers at National Fuel. Some examples include:

- Encouraging employees to discuss their professional development and identify interests or possible cross-training areas during annual performance reviews with their supervisors;
- Corporate and technical training programs based on position, regulatory environment, and employee needs;
- Tuition aid program for educational pursuits related to present work or possible future positions;
- Continuous talent review and succession planning;
- Opportunities for on-the-job growth, through stretch assignments or temporary projects outside of an employee's typical responsibilities; and
- Initiative where all supervisory employees at the regulated companies meet 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 and reflect the diverse communities we serve. The Company recognizes that a diverse talent pool provides the opportunity to gain a diversity of 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. National Fuel believes that being transparent is one way we can remain accountable, and show progress in future years that reflect our diversity and inclusion commitment. To build on that accountability, in December 2020, the Compensation Committee adopted specific performance goals for fiscal year 2021 as part of the Company's Annual at Risk Compensation Incentive Plan for executive compensation, including diversity and inclusion goals for each executive officer.

The Company considers diversity when making hiring and promotional decisions. National Fuel endeavors to cast a wide net of potential candidates to ensure we are considering all qualified individuals. Due to the rural nature of many of our service locations and employment opportunities associated with those locations, the Company faces unique hiring challenges in attracting qualified individuals for those locations. The Company continues to work with community groups and organizations to help promote awareness of job opportunities within diverse communities. The Company also participates in community outreach events to educate job seekers about our commitment to equitable employee representation. This is a trend that the Company aims to continue. Additionally, the Company's recently launched Employee Referral Program states the Company's intention to create a more diverse and inclusive workforce by attracting underrepresented diverse candidates and encourages employees to consider diversity when making referrals.

The management and executive groups regularly participate in the interview process and are actively involved in the promotion process which helps reinforce their accountability for equitable representation. The Company has also partnered with community organizations to sponsor scholarship programs, which provides significant financial support to underrepresented individuals pursuing college degrees in STEM or business related fields. The Company maintains touchpoints with the scholarship recipients in an attempt to provide support throughout their college experience, as well as opportunities to learn about National Fuel and potential job opportunities. Internally, the Company maintains a job posting program, in which openings are posted publicly for the employee group to see, and which provides an opportunity for individuals to self-identify for positions throughout the organization. Additionally, Company officers are encouraged to recommend individuals for cross-training opportunities within the organization.

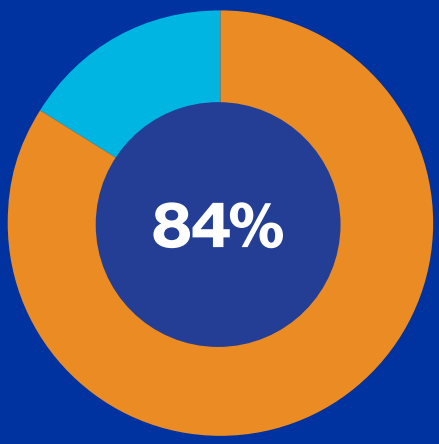
National Fuel has several policies that reinforce our commitment to inclusion within the workplace. The Company's Employee Handbook Policy relative to our Code of Business Conduct and Ethics includes equal employment opportunity commitments and non-discrimination and anti-harassment disclosures, which communicate the Company's expectations with respect to maintaining a professional workplace free of harassment. The Company prohibits discrimination or harassment against any employee or applicant on the basis of sex, race/ethnicity, or the other protected categories listed within the Company's Non-Discrimination and Anti-Harassment Policy.[1] We are committed to a harassment free workplace, which is supported through prevention training for employees. Annually, the Chief Executive Officer of National Fuel Gas Company reinforces the Company's commitment to equal employment opportunity by signing a corporate EEO Policy Statement. Both the Non-Discrimination and Anti-Harassment Policy and EEO Policy Statement are then displayed at all Company locations, included in all employee handbooks, and discussed with all new hires during their onboarding process. The Non-Discrimination and Anti-Harassment Policy is also sent to employees annually through the employee survey and attestation process.

2020 Diversity and Inclusion Initiatives

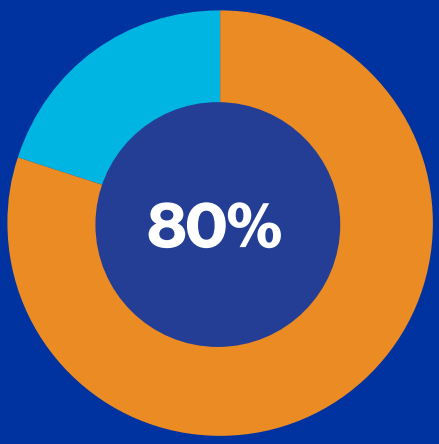
The Company understands that creating a diverse and inclusive workforce is critical to our success. As we continue on the journey to having a more diverse and equitable organization, the Company continues to reimagine our current processes so that we may be a company that is relatable and a reflection of the communities we serve. In furtherance of our diversity commitments, the Company instituted the following initiatives:

1 The Company's Non-Discrimination 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.

2021 Employee Survey Reflects the Company's Diverse and Inclusive Culture



84% believe their supervisor identifies ways to foster a safe and inclusive working environment.



80% agree NFG is making diversity, equity, inclusion an important part of our culture.

Company Diversity & Inclusion Initiatives

2020 D&I Initiative	Progress
Director of Diversity and Inclusion (D&I Director)	• Created this critical new role to spearhead diversity and inclusion initiatives throughout the organization. The D&I Director maintains close partnerships with the employment teams, cultivates the Company's relationships with community organizations, and focuses on initiatives to attract diverse candidates, vendors, and other partnerships.
Focus on Diverse Recruitment	• Executive team receives a monthly report about the composition of the Company's salaried (non-hourly) applicant pools. • D&I Director and Officer in charge of Human Resources meet weekly to discuss diverse recruitment strategies. On a monthly basis, the senior executive responsible for Human Resources attends these meetings • D&I Director also meets weekly with the Assistant General Manager of Human Resource to discuss opportunities and provide resources to the recruiting team.
Initiatives of D&I Director	• 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 Director works to enhance the depth of the scholarship programs granted to students. Scholarship recipients are offered priority consideration for internships, mentorship, and exposure to a variety of fields within the Company.
Diversity and Inclusion Training	• Downstream and Midstream Segment Executive Team: Completed Racial Equity Impact Analysis Training, which evaluated the internal policies and practices throughout the Company. From that training, the Company modified programs and policies to assist in attracting diverse candidates. • Downstream and Midstream Segment Department Managers: Completed Unconscious Bias Training in 2021. Additionally, this group will support each other through accountability partners so that continuous education and awareness becomes the fabric of our culture.

As part of the Company's continued Employee Engagement, in 2021 we asked employees about the Company's focus on diversity and inclusion and its integration within our Company culture. We believe the positive sentiments received from our workforce reflect our increased diversity, equity and inclusion initiatives.

Female Leadership

Women have long occupied many of National Fuel's top corporate levels. Female representation in leadership positions highlights the Company's commitment to inclusion at all corporate levels. Today, four of the Company's ten designated executive officers are women who hold the following important policy-making positions: President of the Company's Utility segment; General Counsel and Secretary; Treasurer and Principal Financial Officer; and Controller and Principal Accounting Officer.

As of December 31, 2020, the Company's workforce was 26.83% female and 73.17% male. The Company believes that numbers alone don't represent the whole picture, but they do inform management on the continued need to invest in and commit to improving our diversity and inclusion. The percentage of gender representation for each of the EEO-1 job categories is provided as of December 31, 2019, and December 31, 2020.

EEO-1 Job Category	2019 Female	2019 Male
Executive/Senior Level Officials	20%	80%
First/Mid-Level Officials	19%	81%
Professionals	35%	65%
Technicians	17%	83%
Craft Workers	7%	93%
Operatives	2%	98%
Laborers and Helpers	7%	93%
Administrative Support Workers	79%	21%

EEO-1 Job Category	2020 Female	2020 Male
Executive/Senior Level Officials	21%	79%
First/Mid-Level Officials	19%	81%
Professionals	34%	66%
Technicians	16%	84%
Craft Workers	6%	94%
Operatives	2%	98%
Laborers and Helpers	9%	91%
Administrative Support Workers	77%	23%

In assessing the Company's commitment to improve diversity, the Company understands 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 the Company as of December 31, 2020 is as follows:

Gender	Average Years of Service
Female	12.33
Male	10.03

Racial and Ethnic Diversity

National Fuel recognizes the need to improve its diversity levels throughout the organization. The Company believes that measuring and sharing this demographic data shows our commitment to our guiding principle of transparency, and offers the Company the opportunity to show progress in the future. As of December 31, 2020, the Company's workforce was 8.53% racially and ethnically diverse. The percentage of racial/ethnic group representation for each of the EEO-1 job categories listed below as of December 31, 2019, and December 31, 2020.

	2019				
EEO-1 Job Category	**Asian**	**Black/ African American**	**Hispanic/ Latino**	**Other[1]**	**White**
Executive/ Senior Level Officials	0.00%	1.44%	0.00%	0.00%	98.56%
First/ Mid-Level Officials	0.28%	1.42%	1.99%	0.28%	96.02%
Professionals	2.47%	1.10%	3.01%	0.82%	92.60%
Technicians	0.00%	1.72%	5.17%	0.00%	93.10%
Craft Workers	0.00%	3.80%	0.54%	1.09%	94.57%
Operatives	0.00%	1.96%	2.35%	1.17%	94.52%
Laborers and Helpers	0.00%	9.26%	4.63%	0.93%	85.19%
Administrative Support Workers	0.00%	15.94%	3.70%	1.15%	79.21%

	2020				
EEO-1 Job Category	**Asian**	**Black/ African American**	**Hispanic/ Latino**	**Other[1]**	**White**
Executive/ Senior Level Officials	0.00%	1.95%	0.65%	0.00%	97.40%
First/ Mid-Level Officials	0.56%	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%	2.88%	0.00%	83.65%
Administrative Support Workers	0.24%	15.63%	3.37%	0.72%	80.05%

Similar to gender diversity, the Company considers the average retention period for racial and ethnic minorities when measuring diversity retention. The average number of years employed by the Company as of December 31, 2020 is as follows:

Race/Ethnicity	Average Years of Service
Black/African American	11.46
White	10.69
Hispanic/Latino	9.15
Other[1]	8.60
Asian	6.01

"Attracting and retaining employees with diverse backgrounds, educations and skillsets will help the Company succeed. Every employee plays a role in creating a diverse, equitable and inclusive work environment."

Annika Samuels
Director of Diversity and Inclusion

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

Multi-Generational Workforce

The Company is also committed to fostering an inclusive work environment where our multi-generational workforce can succeed. The Company offers family-friendly programs to promote flexibility, where possible without interfering with business operations. For example, the Company 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 to the generations represented below if they need to care for a family member.

Age	2019	2020
56 and older	16.37%	16.16%
41-55 years old	33.44%	33.27%
26-40 years old	42.84%	43.08%
25 and younger	7.35%	7.49%

Supplier Diversity

Supplier diversity is an important part of National Fuel's commitment to diversity and inclusion. The Company believes in creating access and opportunity for certified women-owned businesses, minority-owned businesses, and other businesses with recognized diversity classifications. Annually, the Company contacts its suppliers to remind entities that the Company recognizes these certifications and values diversity, and communicates its expectations that suppliers observe the same nondiscriminatory practices to which the Company is committed.

Employee Engagement

Staying Connected to Our Workforce during the Pandemic

Following the worldwide outbreak of the novel coronavirus ("COVID-19") pandemic in the spring of 2020, the Company quickly pivoted to provide support for our workforce. As a provider of an essential service, National Fuel remained committed to the safe and reliable delivery of natural gas to our communities while maintaining the safety of our employees and customers. Throughout the pandemic, the Company's Pandemic Response Team (PRT) has monitored and implemented a comprehensive response plan to ensure continued operations and to protect the health and safety of our employees.

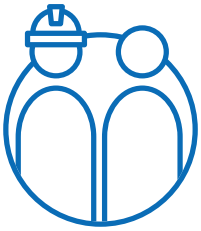
Our Employee Focus During the Pandemic

Focusing on Employee Safety	Continued Communication	Increasing Flexibility
• While still providing an essential service to our customers, our workforce had no known instances of workplace spread due to pandemic-related safety protocols and procedures. • Utilizing an occupational medical consultant for assistance in establishing safety protocols and written guidance provided to employees. • Implemented restricted business travel and visitor restrictions to ensure the safety of the workplace. • Developed Customer Service Safety Protocols and Close Proximity Work Procedures for field employees. Enhanced PPE protocols and facilitated a mass procurement effort to ensure adequate protection for employees required to interact with the public. • Developed sequestration plans for critical service employees. • Established health and safety inspectors to monitor construction activity.	• Regular employee COVID-19 communication and safety education through email and corporate intranet, and transference of information to Operations employees. • Downstream and Midstream Segment's Assistant Vice President of Human Resources communicated weekly updates for over a year and is continuing to do so on a bi-weekly basis to ensure regular contact and engagement with employee groups. • CEO continues to send corporate updates to employees, specific to COVID-19 matters as well as other corporate topics of relevance. • Creation of a series of virtual "townhall" meetings between senior leadership and employees to directly communicate corporate updates and answer questions from employees. • Utilized an electronic survey to gauge levels of employee engagement and monitor vaccination status. • Facilitated creation of Zoom Chat channels for employee interest groups and employee resource groups to ensure employees were staying connected with co-workers. • Provided transparent COVID-19 information to employees regarding medical updates, employee impact and CDC protocols.	• No layoffs or workforce reductions • While still providing an essential service to customers, coordinated rotating shifts and staggered start times of field employees and customer facing employees to account for operational shift density and facilitate social distancing. • Development of a new COVID-19 absence policy and COVID-19 reporting and screening procedures. Supported families with COVID related child care absences during the pandemic with a leave program. • Implemented telecommuting for all employees who can work from home. • Allowed flexible working hours to support those families without traditional childcare, eldercare and school support.

The Company published the Office Return to Work plan and issued online training for office safety protocols contained in the plan.

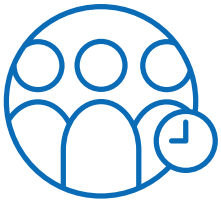
Continued Employee Engagement

Following the high participation rate from the Company's 2019 employee engagement survey, the company released another employee engagement survey in the spring of 2021. This most recent engagement survey targeted non-collectively bargained employees in the Downstream and Midstream segments, and the Company experienced an 85% response rate of those employees surveyed. The engagement survey was developed by a third-party, in consultation with the Company's Human Resources department. All survey responses were submitted to the third-party, who anonymized and presented summary results to the Company so that employees felt comfortable being open and honest with their submissions. The survey results showed the following:



93%
Feel the work they do is important to NFG and our customers.

91%
Agree their co-workers treat them with respect.



83%
Agree they would like to work at NFG for their whole career.

82%
Overall satisfaction of working at NFG.

Employees were able to select answers on a rating scale, or could decline to provide a rating by responding that the question was either not applicable or that they did not have an opinion on the question. Summary results of the engagement survey were shared with senior management and all department heads, as an informative tool to continually enhance the Company's culture and identify areas for improvement. The following survey results reflect the top five areas of improvement since 2019:

Top Five Improvements to Company Employee Survey Responses (Since 2019)

↑25%	Company Executives are doing a good job managing and motivating employees.
↑17%	Department Managers are doing a good job of managing and motivating employees.
↑16%	The workplace culture of National Fuel is positive and energetic.
↑14%	My supervisors helps me understand what I need to do to advance to a new grade, position, or level.
↑11%	There is a strong feeling of teamwork and cooperation in my department.

Serving Our Communities and Customers

For more than a century, 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

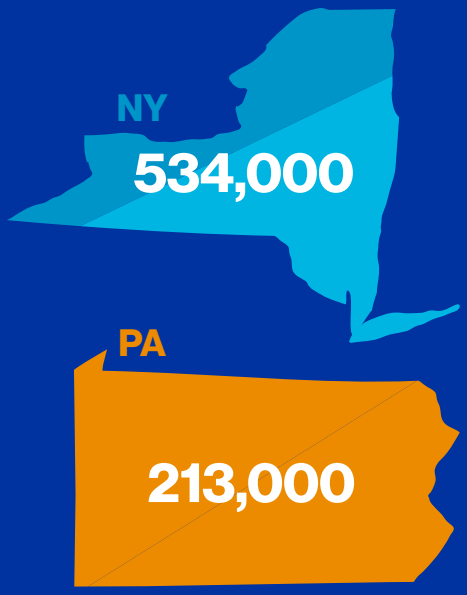
Our goal is to deliver quality service that our customers expect and deserve. Our Downstream Segment operates its primary utility call centers in the heart of its service territories in Buffalo, New York and Erie, Pennsylvania. Our customer service calls are promptly answered by a National Fuel employee physically located in the Downstream Segment's service territory – not an automated voice or an offshore 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 that is amongst the lowest in the states in which we operate. In fiscal 2020, our Downstream Segment achieved a 93% residential customer satisfaction rate in both New York and Pennsylvania.

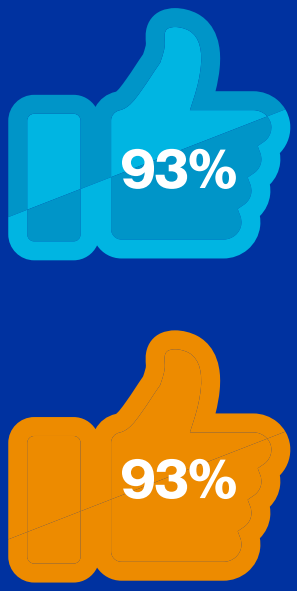
Service Affordability

Our Downstream Segment has been successful in keeping utility services affordable for our customers. Our utility customers have seen the direct benefit of regional shale natural gas development in the form of lower energy costs. In 2020, a U.S. Energy Information Administration ("EIA") analysis

Customer Accounts
as of 9/30/20



Customer Service Rating
FY 2020



found that in 2019, the Company had the lowest residential gas delivery rates in New York and Pennsylvania and ranked #1 and #2, 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.

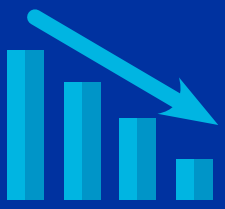
Serving Our Communities

In 2020, National Fuel, the National Fuel Gas Company Foundation (the "Foundation"), and our employees strived to help the communities where we live and work meet the challenges presented by the COVID-19 pandemic, donating more than $1.3 million.

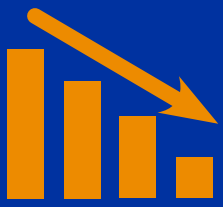
The Foundation granted $250,000 in emergency grants in April 2020 that addressed critical needs across the Company's New York and Pennsylvania service territories with a focus on emergency response funds and food banks, including WNY COVID-19 Community Response Fund, FeedMore WNY, Second Harvest Food Bank of Northwest Pennsylvania, Erie Community Foundation, and Community Food Warehouse of Mercer County.

The Company's Employee Charitable Giving Program – a matching gift program through which the Foundation will match employee donations dollar for dollar up to $750 per employee per year to the employees' chosen nonprofits – aligns a large portion of National Fuel's charitable support with the wishes and generosity of our employees. Coming off a record year of employee giving and engagement amid a pandemic proved challenging but employees rose to the challenge, pledging more than $545,000 to nonprofits across the U.S. with the majority located in the Company's New York and Pennsylvania service territories. With the Foundation match, this program alone will donate nearly $1 million in 2021. Since its inception in 2005, the Company, Foundation, and our employees have given more than $22 million to thousands of charitable organizations.

Average Residential Winter Bill



50% Decrease in NY since 2008-09



49% Decrease in PA since 2008-09

Utility Residential Rates (EIA)

Lowest in New York

Lowest in Northeast U.S.

Lowest in Pennsylvania

2nd Lowest in Northeast US.

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. In the wake of the pandemic, we worked to provide virtual opportunities as well as socially distanced, outdoor events that fell in line with local, state, and federal safety guidelines.

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. For example, the Company's Midstream Segment follows FERC's guidance on identifying environmental justice communities in certain pipeline project resource reports. Additionally, the Company notifies landowners on certain pipeline project webpages of the availability of language assistance services that the Company provides to landowners with any questions about the project. This posting provides notification in the top five languages of that state in an effort to make our landowner assistance more inclusive. These same translation services are also offered to the Downstream Segment's customers that may have questions pertaining to their service.

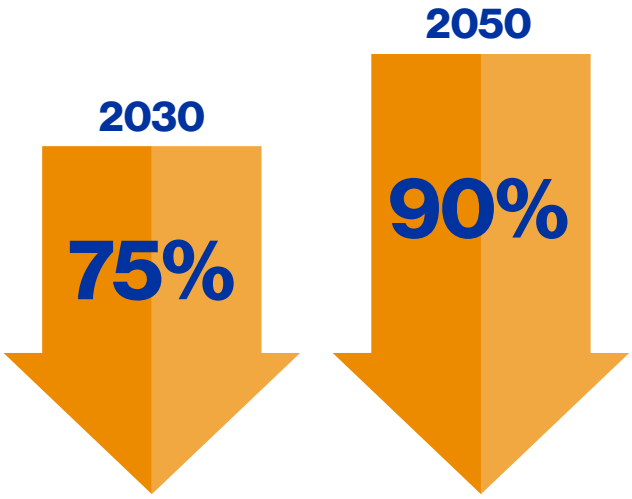
National Fuel

Downstream Segment

Greenhouse Gas Emissions

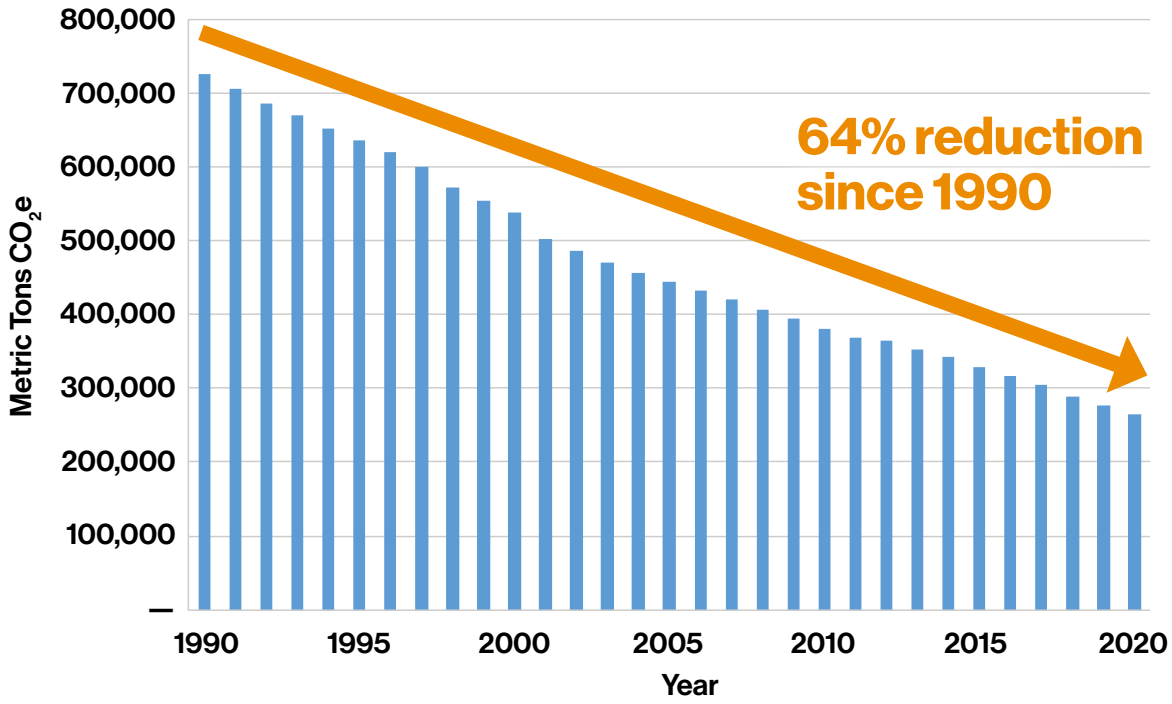
For over 118 years, National Fuel and its employees have been committed to operating safely and responsibly as important members of our local, national, and world communities. One of our six guiding principles is "Environmental Stewardship" which reflects our understanding of the vital role that we play in upholding standards of environmental protection. In furtherance of this principle, in 2021 Distribution Corporation announced greenhouse gas 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.

Recently Announced Distribution System GHG Reduction Targets



Utility EPA Subpart W Emissions[1]

Estimated Emissions as CO_2e [AR5]
1990-2020: Mains & Services Only

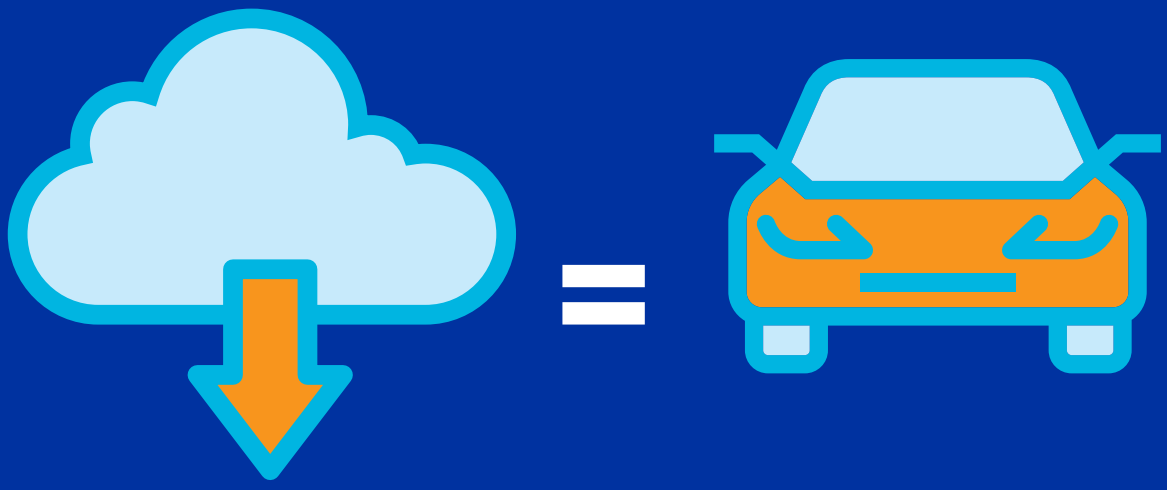


- **GHG Emission Reductions CO_2e:** Since 1990, the baseline year for EPA GHG Inventory (GHGI) reporting, Distribution Corporation's System Modernization Program has reduced annual GHG Emissions by 64%.

1 CO_2e 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 CO_2e basis.

Downstream System Modernization Emissions Reductions

(Cumulative CO_2e GHG Emissions Reductions Since 1990)



7.96 Million MT CO_2e

1.73 Million Passenger Vehicles[1]

Additionally, each of National Fuel's subsidiaries made independent emissions reduction commitments under the 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 (collectively, "leak-prone pipe") at an average rate of 3% per year for the period 2019 to 2023. With respect to leak-prone pipe, in 2020, Distribution Corporation reduced its inventory of unprotected steel mains by 6.1% and cast/wrought iron mains by 7.0%. Our overall reduction of LPP mains was 6.2%.
- Replacing or retiring unprotected steel services when leaking or the associated main is replaced/retired. Our reduction in unprotected steel services in 2020 was 4.8%.

"We continue to evaluate low-carbon fuels such as RNG and hydrogen, both of which have the potential to utilize our existing resilient and reliable infrastructure, to deliver decarbonized energy supplies to our customers."

Matthew Wisotzky
Civil Engineer

1 Based on EPA estimated annual emissions of 4.6 MT CO_2 for a typical passenger vehicle. Source: "Greenhouse Gas Emissions from a Typical Passenger Vehicle," document # EPA-420-F-18-008, March 2018.

- Tracking various data/information on excavation damages through 2021. At that point Distribution will determine whether a damage reduction goal is warranted.

Scope 1 Greenhouse Gas Emissions (Metrics Tons CO_2e)

		2019[1]	2020
Utility (NY)	EPA Subpart W Mandatory Reporting[2]	178,300	169,887
	Additional EPA Subpart W Facilities[3]	1,473	1,448
	Other Sources[4]	65,512	67,234
	Total Utility (NY)	245,285	238,569
Utility (PA)	EPA Subpart W Mandatory Reporting	99,469	96,861
	Additional EPA Subpart W Facilities	329	110
	Other Sources	29,760	30,226
	Total Utility (PA)	129,558	127,197
Utility (ALL)	EPA Subpart W Mandatory Reporting	277,769	266,748
	Additional EPA Subpart W Facilities	1,802	1,558
	Other Sources	95,272	97,460
	Total Utility (All)	374,843	365,766

Methane (CH_4) Emissions (Metrics Tons)

		2019	2020
Utility (NY)	EPA Subpart W Mandatory Reporting[1]	6,360	6,060
	Additional EPA Subpart W Facilities[2]	53	52
	Other Sources[3]	2,104	2,167
	Total Utility (NY)	8,517	8,279
Utility (PA)	EPA Subpart W Mandatory Reporting	3,549	3,456
	Additional EPA Subpart W Facilities	12	4
	Other Sources	950	963
	Total Utility (PA)	4,511	4,423
Utility (ALL)	EPA Subpart W Mandatory Reporting	9,909	9,516
	Additional EPA Subpart W Facilities	65	56
	Other Sources	3,054	3,130
	Total Utility (All)	13,028	12,702

2020 Scope 2 Emissions (Metric Tons Co_2e)

New York	1,057
Pennsylvania	1,242
Utility (All)	2,299

Ecological Impacts

At National Fuel, we strive to meet the needs of our customers through the consistent and safe transportation of natural gas. As such, a well-maintained and reliable infrastructure of integrated natural gas facilities is key. To accommodate the ongoing operation of such facilities, projects involving their maintenance and replacement are necessary. As the construction of these projects often entails proper coordination with local, state, and federal authorities, notably environmental agencies, it is important that robust and effective environmental management policies and practices are in place. See *Environmental Management Policies and Practices*.

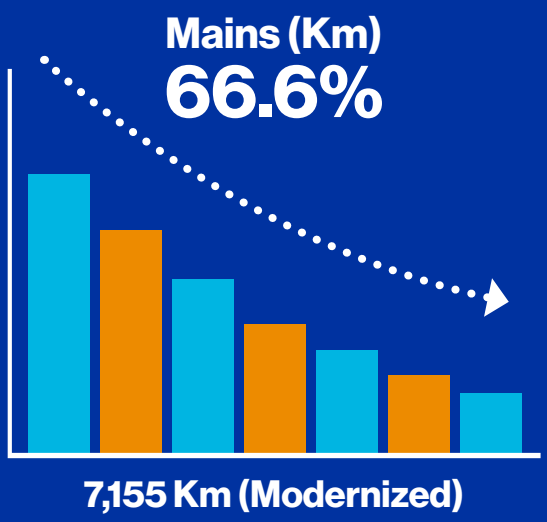
Integrity of Gas Delivery Infrastructure

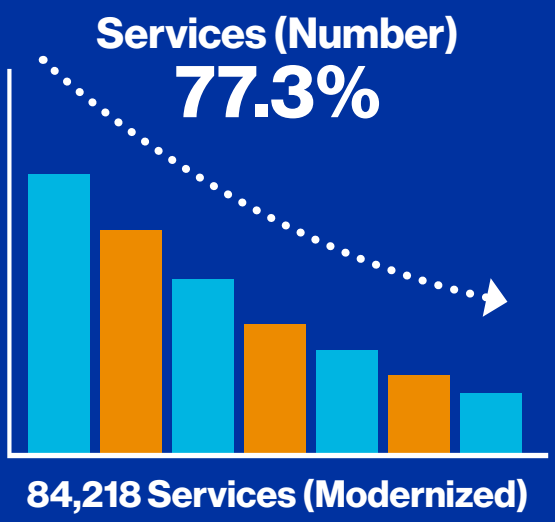
At National Fuel, our highest priority is the safety of our customers, employees and the communities we serve. Distribution Corporation operates approximately 36,000 kilometers of pipelines, including service lines, which serve approximately 749,000 customers in Western New York and northwestern Pennsylvania as of the close of calendar 2020. While we are proud of our safety record, we are also experienced enough to know that we can never become complacent. This is why we have worked hard to establish a culture that embraces continuous improvement in all aspects of safety.

1 Values for 2019 are "restated" from the original report year 2019 disclosure. 2019 data has been revised to include the same source categories as 2020 wherever possible to provide a consistent basis for year-over-year disclosure.
2 Emissions subject to the Greenhouse Gas Mandatory Reporting program (40 CFR Part 98, Subpart W) include mains, services, M&R stations (PA), and large combustion units in the natural gas distribution segment (LDC's).
3 Includes emissions from: 1)NFGDC-owned transmission pipeline and gathering segments that are subject Subpart W, but do not meet the reporting threshold,2)Blowdown emissions are included are included from the transmission pipeline segment, and 3) in the gathering segment, emissions from blowdowns, dehydrator vents, and equipment leaks.
4 '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), M&R stations (NY), small combustion units, fleet, and natural gas space heating.

Downstream System Modernization Progress

(Bare Steel, Cast Iron & Wrought Iron Pipe Reduction since 1990)





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

Distribution Corporation places a high priority on having a rapid response to emergencies and a thorough investigation once onsite. We believe this is critical to preventing an emergency situation from becoming an incident. As a result of our commitment to emergency response, Distribution Corporation is among industry leaders in this area as confirmed by annual industry benchmarking and statewide regulatory performance measure reporting.

When investigating pipeline emergencies and incidents, Distribution Corporation utilizes a comprehensive Root Cause Analysis (RCA) process to determine the cause of the incident and to identify lessons learned to prevent future incidents. The process includes the use of trained facilitators and the oversight of an RCA Standards Team comprised of subject matter experts from across the organization. The following table summarizes the number of U.S. Department of Transportation (DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA) Reportable Pipeline Incidents, Corrective Action Orders, and Notices of Probable Violation for Distribution Corporation during the period 2018 through 2020.

Distribution Corporation Incident and Compliance Summary

	2018	2019	2020
Reportable Gas Distribution Pipeline Incidents	–	2	1
Corrective Action Order Cases Initiated	–	–	–
Notices of Probable Violation Cases Initiated	–	–	–

During the three year period 2018 through 2020 Distribution Corporation had three natural gas pipeline incidents reported to PHMSA, as defined and reported in accordance with 49 CFR §191. All three incidents were reported as a result of property damage that exceeded the $50,000 PHMSA reporting threshold. None of the incidents were a “PHMSA serious incident” as defined by SASB.

System Modernization - Percentage of Distribution Pipeline that is Cast and/or Wrought Iron or Unprotected Steel [1]

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 ("System Modernization Program"). The Company designed this comprehensive program to identify and prioritize pipeline replacements system-wide based on historic leakage rates and risk. Distribution Corporation's System Modernization Program is robust and designed to ensure the safety and reliability of our system, and, in turn, reduces leakage rates and GHG emissions.

Since 1990, Distribution 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 cast iron mains in its Pennsylvania service area, and anticipates replacing its remaining New York cast iron inventory over the next two years.

Distribution Corporation's philosophy with respect to system modernization is focused on maximizing system safety and reliability by controlling unit costs and increasing annual pipeline replacement length. In designing pipeline replacement projects, Distribution Corporation looks to develop 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, thereby reducing excavation and restoration costs, and reducing future excavation damage to plastic mains. Smaller diameter mains have lower unit costs in general and medium pressure mains eliminate the need for costly road crossings and tie-ins to establish redundant feeds, typically required in low-pressure systems. An additional benefit to expanding the medium pressure system is the relocation of gas meters from inside of homes and businesses to the outside for improved employee and pipeline safety and easier access for meter reading and operation and maintenance. Distribution's continued steady pace of system modernization has resulted in lower construction unit costs, lower system operations and maintenance costs, and a high level of system reliability and safety; all significant savings and benefits for our customers.

Over the past five years, Distribution Corporation has invested over $341 million in the safety of our utility pipeline network, including system modernization. Distribution Corporation's inventory of unprotected bare steel, cast iron, and wrought iron distribution pipelines is currently 12.9% as shown in the following table.

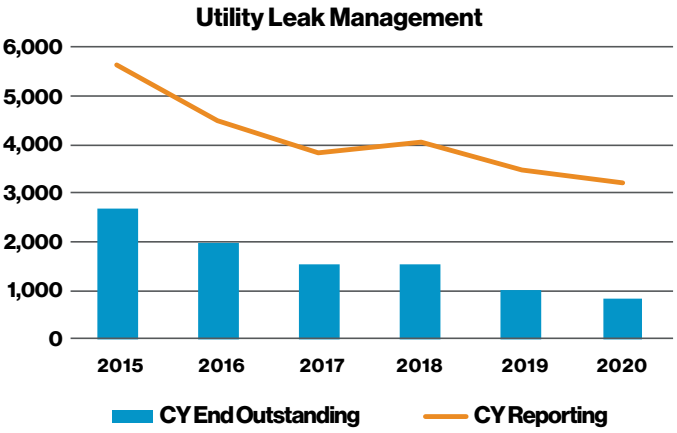
Distribution Unprotected Steel, Cast Iron and Wrought Iron Pipeline Inventory

Distribution Pipelines As of December 31, 2020	Unprotected Bare	Cast Iron	Wrought Iron	Total System
Distribution Mains (Kilometers)	**3,054**	**38**	**492**	**23,510**
% by Material	13.0%	0.2%	2.1%	100.0%
Services (Number)	54,107	–	–	655,492
Services (Kilometers)	**1,025**	**–**	**–**	**12,332**
% by Material	8.3%	–	–	100.0%
Total Distribution Pipelines (Kilometers)	**4,079**	**38**	**492**	**35,842**
% by Material	11.4%	0.1%	1.4%	100.0%

The System Modernization Program has resulted in significant annual GHG emission reductions, as well as annual leak reductions.

1 U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration, 2020 Gas Distribution Annual Report for National Fuel Gas Distribution Corporation (Operator IDs 13061 and 13062).

- **Leak Reduction:** Over the past five years, our Downstream Segment's System Modernization Program has resulted in a significant reduction in annual reported leaks and year-end leak backlogs. At calendar year-end 2020, Distribution Corporation had 70% fewer outstanding leaks than at calendar year-end 2015. Distribution Corporation also experienced a 43% reduction in reported leaks over this same period.



Transmission Pipelines Inspected

Distribution Corporation operates seven transmission pipelines totaling 109.5 kilometers in length. Over 90% of this pipeline length is characterized as low-stress, which means it operates with a higher level of safety compared to similar higher pressure pipelines.

With respect to 49 CFR §192, Gas Transmission Pipeline Integrity Management compliance, 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 subsidiaries.

See *Operational Safety, Emergency Preparedness & Response* for additional information on the Natural Fuel Gas Company Transmission Pipeline Integrity Management Program and Facility Design & Construction Management process which also apply to Distribution Corporation's transmission pipeline modernization and integrity management programs.

Percentage of Downstream Segment Transmission Pipelines Inspected [1]

	2018	2019	2020
Transmission Pipelines (Kilometers)	109	110	110
Pipelines Inspected (Kilometers)	13	0[2]	7
% of Pipelines Inspected	11.7%	0.0%	6.0%

Managing the Integrity of Our Gas Delivery Infrastructure

National Fuel has been building and operating natural gas pipelines for more than a century and continues to embrace a culture of "safety first." As such, we plan maintenance efforts to meet or exceed safety requirements and invest tens of millions of dollars annually to improve the safe operation of our systems. The following highlights the major programs and systems our Downstream and Midstream Segments utilize to ensure pipeline integrity and the safety of our employees, business partners, and the communities we serve.

1 PHMSA 2020 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.
2 No mileage scheduled for assessment in 2019 based on Baseline/Reassessment Plan.

Average Emergency Response Time (2020)

NY

16.6 minutes

PA

20.8 minutes

Customer Safety

Every day through every season, National Fuel places the highest priority on the safety of our employees, customers and the communities we serve. From our 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:

Emergency Response

National Fuel believes that the most hazardous condition is the unknown condition, and that a quick emergency response and thorough investigation is critical to operating a safe utility system. Distribution Corporation's emergency response time is among the best for gas utilities in both New York and Pennsylvania. In 2020, Distribution Corporation responded to over 95% 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.

Distribution Corporation offers a number of training alternatives for emergency response personnel in the communities we serve, including an online First Responder Natural Gas Safety Training Program, a self-directed, interactive, online training package that provides emergency response personnel with the information they need to safely identify and respond to incidents that involve natural gas pipelines and other natural gas facilities. This free training program was designed in partnership with fire chiefs, safety trainers, educational experts, and instructional design professionals. Distribution Corporation also offers and promotes free in-person training for first responders and emergency management agencies in our service territory, and sponsors and participates in regional meetings covering pipeline safety with local excavators, emergency responders, and public officials.

Leak Management

With thousands of kilometers of underground piping that are subject to corrosion, frost conditions, and other outside forces, some leaks are inevitable on any gas distribution system. Therefore, an effective leak management program is essential to ensure safety and to reduce greenhouse gas emissions from natural gas leaks.

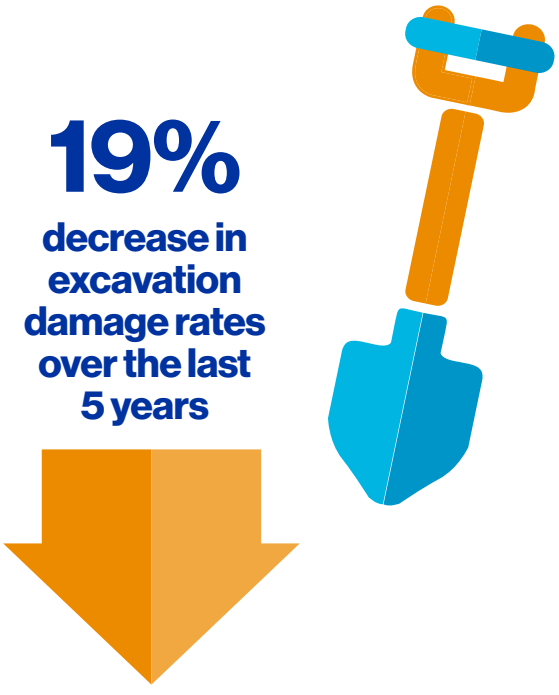
The federal Protecting our Infrastructure of Pipelines and Enhancing Safety Act of 2020 (PIPES Act of 2020), signed into law on December 27, 2020, requires new regulations for leak detection and repair programs to identify, locate, and categorize all leaks that are hazardous to human safety or the environment. 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 replacement or remediation 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 and we are exploring new areas for reducing methane emissions. Current mitigative measures include:

- 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;
- Annual leak backlog goals to drive year over year improvement, which are also tied to annual executive compensation goals;
- Annual system modernization targets to replace pipelines that have a higher potential to leak.

Damage Prevention

While we cannot control the actions of all third-party excavators in our region, National Fuel dedicates significant resources to educate and train contractors, our customers, and the general public on the importance of damage prevention and safe excavation practices through our "811 - Call Before You Dig" awareness campaigns. These awareness campaigns have included customer newsletters in multiple languages, radio and print advertisements, social media posts, outdoor billboard ads, educational outreach to local municipalities, and educational outreach to third party excavators. Our Downstream Segment responded to over 170,000 requests for pipeline marking prior to excavation in 2020. As a result of our focus on public education and continuous improvement, our Downstream Segment has achieved a 19% 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 excavation practices while working near natural gas facilities. 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 43,600 Excess Flow Valves (EFV's), which shut-off the flow of gas if a service line is damaged. We currently have over 175,200 EFV's installed on our system.

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 basics of the natural gas industry and instructs the employees and contractors on the safe operation of mechanized equipment in the vicinity of a transmission or distribution gas facility for maintenance or installation of a pipeline. One-Call regulations, facility marking colors, proper support of pipelines, and backfilling procedures are also covered in this class. With the knowledge that is received from this class, National Fuel Operations field employees can be considered "Damage Prevention Ambassadors" when interacting with excavators.

In 2015, National Fuel implemented a "Look Out for the Mark Out" program which encourages National Fuel employees to intervene in any excavation activity near Company facilities that is being performed without a One-Call request. Employees are incented to participate by a series of tiered monetary awards. National Fuel employees have intervened

"Our highest priority is the safety of our customers, employees and communities we serve, and we work diligently to maintain and develop a culture of safety and continuous improvement that is embraced throughout the entire organization."

Kevin House
Vice President and Chief Safety Officer

in excavations ranging from landscaping done with hand tools to large-scale building projects with heavy equipment. These efforts have prevented damages to gas facilities ranging from utility service lines to high-pressure transmission lines. Since the inception of the program, employees have discovered over 1,600 occurrences in which excavators were working without a valid one-call ticket, with the potential to result in damage to our facilities. Education from this program continues to have a direct impact on safe excavation practices as Company personnel interface directly with the excavator at the time of the excavation.

In 2020, to further enhance our damage prevention program, National Fuel began a new Damage Prevention Inspector (DPI) pilot in our New York service area. The program utilizes artificial intelligence computed risk scoring to rank one-call tickets based on, among other things, excavator history, location of excavation, and the type of work being performed. High-risk tickets are then dispatched to a DPI who performs a site visit on the date of excavation to engage with the excavator, reinforce proper excavation practices and answer any questions in addition to standing-by during excavation if warranted.

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

Program Objectives	
• Use of a one-call notification system prior to excavation and other damage prevention activities, • Possible hazards associated with unintended releases from a gas pipeline facility,	• 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, and - Excavators, emergency officials, and local public officials located in counties within National Fuel's service territory. • Collaboration with the Northeast Gas Association on a regional pipeline safety media campaign to produce and transmit television and radio spots throughout the Northeast United States. • Bill stuffers, newspaper and online ads, and news releases regarding pipeline safety. • Meetings with municipal planning and permitting officials, to encourage them to: - Make permit applicants aware of the one-call requirements, and - Require inclusion of natural gas pipelines and easements on subdivision and site plans to prevent excavation damages and future encroachments.	• Entering into Encroachment Agreements with excavators, drilling operators, loggers, and homeowners allowing them to encroach upon National Fuel's pipeline right-of-way provided certain safety and insurance measures are followed. • Land Department and Operations personnel participate in regional pipeline safety meetings for the benefit of excavators and emergency responders. • Mailings to plumbers and drain cleaning services, advising them of the potential hazards associated with sewer cross bores as well as preventative measures. • Personal visits and/or 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. • Mailings to farmers and others in the agricultural industry, advising them of the potential hazards associated with deep ripping and plowing near natural gas pipeline facilities, as well as preventative measures.

System Safety

Our Downstream and Midstream Segments maintain robust integrity management programs to identify and mitigate risks and ensure safety in the operation 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 gas distribution pipeline integrity risks. The Company integrates available information about its pipelines to inform its risk decisions. The DIMP was designed to promote continuous improvement in pipeline safety by identifying and investing in risk control measures beyond previously established regulatory requirements. Seven essential elements highlighted in the table on the following page, and details:

- The programs and accelerated actions that are utilized to enhance system knowledge and identify, manage and mitigate risks.

- Ongoing enhancements to the DIMP include the implementation of a probabilistic risk model in 2021. Using the latest technology, the new model will interface with the National Fuel Geographic Information System (GIS) to better evaluate asset risk across the entire distribution system, including risks associated with low-probability, high-consequence incidents. The new model will allow our engineers to run "what-if" scenarios to evaluate pipeline replacement and other mitigative measures, such as increased leak survey frequency, to focus efforts on measures that provide the greatest impact to safety.

Pipeline Safety Management System

On July 10, 2012, the National Transportation Safety Board (NTSB) made a recommendation to the American Petroleum Institute (API) to facilitate the development of 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. The Transportation, Airline, Chemical Process and Nuclear Industries have all improved their safety records by implementing SMS.

Stakeholders from across the pipeline industry including operators, regulators, industry trade associations and safety experts representing the public were involved in developing the API Recommended Practice (RP) 1173 on Pipeline Safety Management Systems (PSMS) which was published in July 2015.

API RP 1173 provides a systematic approach to safety and continuous improvement through 231 requirements organized into ten essential elements outlined in the table on the following page.

On May 21, 2019, Senior Management of our Downstream and Midstream segments, along with AGA membership, committed to implementing an API RP 1173 compliant PSMS within three years. The first step in implementing a PSMS is to perform a gap analysis to evaluate alignment of existing programs and procedures with API RP 1173 requirements. The Company completed its gap analysis in 2019 using an experienced third-party consultant. The final Gap Analysis Report was issued January 9, 2020.

Our current focus is on implementing a web-based Safety Management System to support our PSMS implementation and allow us to:

- Enhance inspections and observations of work activities to validate understanding of, and 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,
- Track and report on key performance indicators across all pipeline and employee safety programs,
- Manage change throughout the organization using standardized workflows and action tracking, and
- Facilitate two-way safety communications with front line company and contractor personnel.

Safety Program Elements

Inspection & Maintenance Programs	DIMP Essential Elements	API RP 1173 Elements
• 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 Inspection; • 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.	• 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.	• Leadership & Management Commitment; • Stakeholder Engagement; • Risk Management; • Operations Controls; • Incident Investigation, Evaluation & Lessons Learned; • Safety Assurance; • Management Review & Continuous Improvement; • Emergency Preparedness & Response; • Competence Awareness and Training; and • Documentation & Record Keeping.

Employee and Contractor Safety

Safety is a core value and guiding principle, and our highest priority at National Fuel. It is imperative that every employee and contractor return home safely each day.

Integral to our safety commitment is a robust training and qualification program to ensure that our employees and contractors are knowledgeable and competent in performing their work, in accordance with procedures designed to ensure regulatory compliance and reduce the probability of incidents. Distribution Corporation trains and certifies contractor employees performing construction or operations and maintenance work on its pipeline facilities using the same classroom training and qualification/requalification exams as Distribution Corporation employees. The education of our employees extends beyond the classroom through regular emergency drills and tabletop exercises that test our employee's response to simulated emergencies. These exercises periodically include representatives from local emergency management agencies.

Over the past three fiscal years our Downstream and Midstream Segments have invested more than 420,000 hours on safety meetings, training and operator qualification for our hourly field personnel. In fiscal year 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 training and performance evaluations under near real-world conditions. The improvements also included the construction of a Prometric[1] certified and operated testing center.

Safety Meeting, Training and Operator Qualification Hours

Fiscal Year	2018	2019	2020
Training Hours	128,953	143,719	148,231
Average Hourly Operations Employees	743	742	758
Average Training Hours/Employee	174	194	196

Across the Company, we have implemented safety programs and management practices to ensure that a culture of safety is prioritized and embraced throughout the entire organization. These important initiatives include:

- Safe 4 the Right Reasons™ Safety Culture Program[2] for promoting safe work behaviors and inspiring teamwork for safety. The program has been incorporated into every element of our safety program and is continuously reinforced by employees and management;

- Comprehensive web-based operating procedures designed for ready access by employees and contractors to ensure safety and compliance, including our Operational Compliance Program to ensure gas safety requirements of laws, regulations and orders are incorporated into procedures and that employees are trained to any new procedures, and that compliance is audited in the field with annual "roll-up" certifications;

- Weekly Safety Tips Published by Safety Department including submissions from employees; used to share lessons learned, raise safety awareness, and build safety culture;

- Construction site work rules, safety procedures and guidelines on personal protective equipment;

- Jobsite safety inspections and 3rd party safety audits of large construction sites to ensure safety compliance;

1 Prometric is a leading provider of technology-enabled testing and assessment solutions to many of the world's most recognized licensing and certification organizations, academic institutions, and government agencies.
2 The Safe 4 the Right Reasons™ Safety Culture Program is a product of DiVal Safety Equipment, Inc.

Utility and Pipeline & Storage **OSHA Recordable Injury Rates**

Past 5 Years
31%

Past 10 Years
59%

- Multi-level employee and management interactions to identify and review incidents, safety concerns and lessons learned, and to set safety expectations and deliver timely safety messages, to raise safety awareness and build safety culture. This includes Bi-weekly Safety Calls including senior management, management, supervision and union safety coordinators, Labor-Management Safety Coordinator meetings, and All Employee" Safety Calls including senior management, supervision and hourly employees;
- Corporate Officer Health and Safety Goals tied to executive compensation to promote safety;
- Intranet Safety Resource Center which provides ready access to the Employee Safety Handbook and other safety procedures, safety forms, safety training resources, PPE information, and COVID-19 safety protocols;
- "Stop work responsibility" given to all employees and contractors in the event they observe an unsafe practice or condition;
- Table top simulations and live drills for emergency response preparedness including participation of local first responders;
- Vehicle safety programs and driver safety training, including the use and review of driver cameras;
- INGAA Safety Culture Survey; performed every 3-years the survey is utilized to monitor our progress in cultivating a culture of safety across our organization, and to identify areas for improvement; and
- Extensive employee safety training and awareness, including the following topics.[1]
  - Hazardous Energy Control
  - Confined Space Awareness
  - HAZCOM (Hazard Communication)
  - Hearing Loss Prevention
  - HAZWOPER (Hazardous Waste Operations and Emergency Response)

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

- Contractor safety pre-qualifications and reporting on environmental, health and safety (EHS) performance. Contractors perform a significant portion of our work and we recognize the importance of contractors working safely. 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 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.

The workplace safety record in the Midstream and Downstream segments has improved significantly over the last ten years. In fiscal year 2020, Supply and Distribution Corporation achieved an all-time best safety record with combined OSHA recordable injury and DART injury rates of 2.30 and 2.01, respectively, representing a 59% decline in the OSHA recordable injury rate and 37% decline in the DART injury rate since 2010. To celebrate the accomplishment every National Employee was awarded an additional paid day off in 2021 – a "Safety Day", in appreciation of an outstanding team effort for safety. Employees were encouraged to use a portion of their "Safety Day" to improve safety for their family or friends.

On top of achieving a Company best safety record in 2020, the AGA also recognized Distribution Corporation in Pennsylvania and Supply Corporation as top-tier safety companies in 2020 and leaders in accident prevention. Each year, the AGA awards member companies that have achieved a DART incident rate below the industry average by company type.

In addition, the Energy Association of Pennsylvania recognized the combined Midstream and Downstream Segments in our Pennsylvania Division with four safety achievement awards for 2020:

- Exceptionally Low Injury Incidence Rate with 100,000 or more hours worked
- Exceptional Reduction in Injury Incidence Rate with 100,000 or more hours worked
- Exceptional Reduction in Motor Vehicle Accidents
- Exceptionally Low Preventable Motor Vehicle Incident/ Accident Rate with more than 2 million miles driven

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

Preventing Serious Injuries and Fatalities (SIF[1])

To prevent SIF or potential SIF (PSIF) incidents from occurring in the workplace, the Safety Department for the Downstream and Midstream Segments performs a thorough investigation of all injuries and incidents to identify the contributing factors and lessons learned. Examples of corrective actions include equipment/tooling upgrades, material changes, procedure revisions and training. Most corrective actions include a combination of safety controls aimed at protecting our workers and we involve front-line workers who are most familiar with the activities to get their perspectives, input and suggestions.

In fiscal 2021, our Downstream and Midstream businesses conducted an employee safety survey in our Operating and Engineering divisions to obtain employee input regarding PSIF exposures and contributing factors in our workplace. With senior management participation, more than 60 site-specific employee meetings were conducted to review the results and obtain additional employee feedback. Suggestions and ideas for improving safety were documented and work is under way to address specific safety concerns and to implement controls to prevent exposure to SIF and PSIF injuries. Key to this initiative was the development of industry consensus guidelines Guidance for Serious Injury and Fatality Prevention developed by the INGAA Foundation in which National Fuel played a leadership role in developing.

Safety Leadership

National Fuel has played a significant safety leadership role in our industry through our participation with trade associations such as AGA and Interstate Natural Gas Association of America (INGAA). As mentioned previously, National Fuel was instrumental in initiating the SIF study at INGAA and served in a leadership capacity in the development of the consensus guidelines. National Fuel also co-chaired the AGA committee which published the white paper, "Natural Gas Workers and Natural Gas Fires" that provided the industry with data useful for establishing procedures for protecting workers from

1 A work-related injury or illness resulting in a fatality, or required immediate life-preserving rescue action, and if not applied immediately would likely result in the death of that person (life-threatening), or would result in the permanent and significant loss of a major body part or organ function that permanently changes or disables that person's normal life activity (life-altering).

natural gas fires. For his contributions in this effort, our General Manager of Safety received the AGA "Trailblazer Award" in 2018.

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 American Gas Association (AGA) Gas Filled Occupancy (GFO) Task Force to: (1) evaluate and learn lessons from past incidents of GFO incidents; (2) investigate technology options to identify GFO's; and (3) 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. As a result of the lessons learned from the AGA GFO initiative, in fiscal 2021 National Fuel implemented enhanced procedures and tooling for responding to GFO incidents to reduce the risk to our customers, employees and the general public.

Future Direction

National Fuel recognizes that the absence of injuries does not necessarily indicate the presence of safety. Even though our injury rates have declined substantially over recent years, we recognize the need to avoid complacency and we embrace continuous improvement as a core value throughout our organization. The planned 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.

OSHA Rate

The OSHA rates reported here are for Direct Full-Time Employees for National Fuel's Downstream and Midstream Segments, excluding National Fuel Gas Midstream Company, LLC which comprises less than 1% of the Utility and Midstream Segment employees and who did not have any recordable injuries over the past three years.

OSHA Total Recordable Incident Rate (TRIR)

Utility	Fiscal Year (October 1 to September 30)		
	2018	2019	2020
TRIR	3.62	4.34	2.88
Injuries	46	56	37
Hours Worked	2,543,251	2,578,155	2,572,247

Midstream	Fiscal Year (October 1 to September 30)		
	2018	2019	2020
TRIR	1.30	1.02	0.49
Injuries	5	4	2
Hours Worked	768,490	785,616	813,044

Total Utility & Midstream	Fiscal Year (October 1 to September 30)		
	2018	2019	2020
TRIR	3.08	3.57	2.30
Injuries	51	60	39
Hours Worked	3,311,741	3,363,771	3,385,291

OSHA Days Away, Restricted or Transferred Rate (DART)

Utility	Fiscal Year (October 1 to September 30)		
	2018	2019	2020
DART	2.52	2.87	2.57
Incidents	32	37	33
Hours Worked	2,543,251	2,578,155	2,572,247

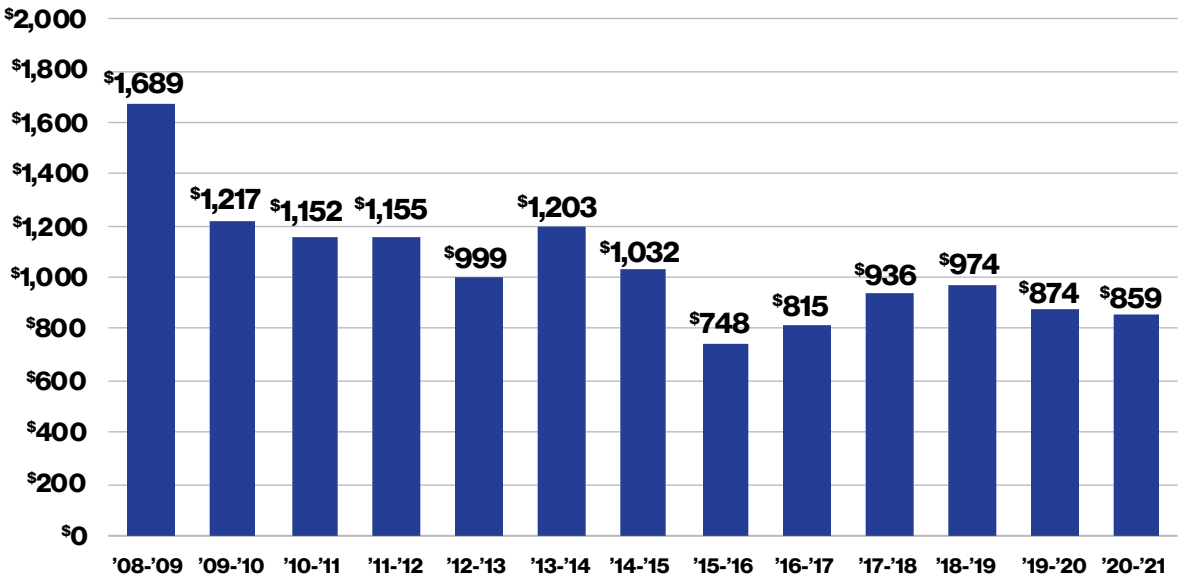
Midstream	Fiscal Year (October 1 to September 30)		
	2018	2019	2020
DART	0.78	0.51	0.25
Incidents	3	2	1
Hours Worked	768,490	785,616	813,044

Total Utility & Midstream	Fiscal Year (October 1 to September 30)		
	2018	2019	2020
DART	2.11	2.32	2.01
Incidents	35	39	34
Hours Worked	3,311,741	3,363,771	3,385,291

Fatality Rate

Total Utility & Midstream	Fiscal Year (October 1 to September 30)		
	2018	2019	2020
Fatality Rate	0.00	0.00	0.00
Fatalities	0	0	0
Hours Worked	3,311,741	3,363,771	3,385,291

New York Residential – Normal Average Annual Bill

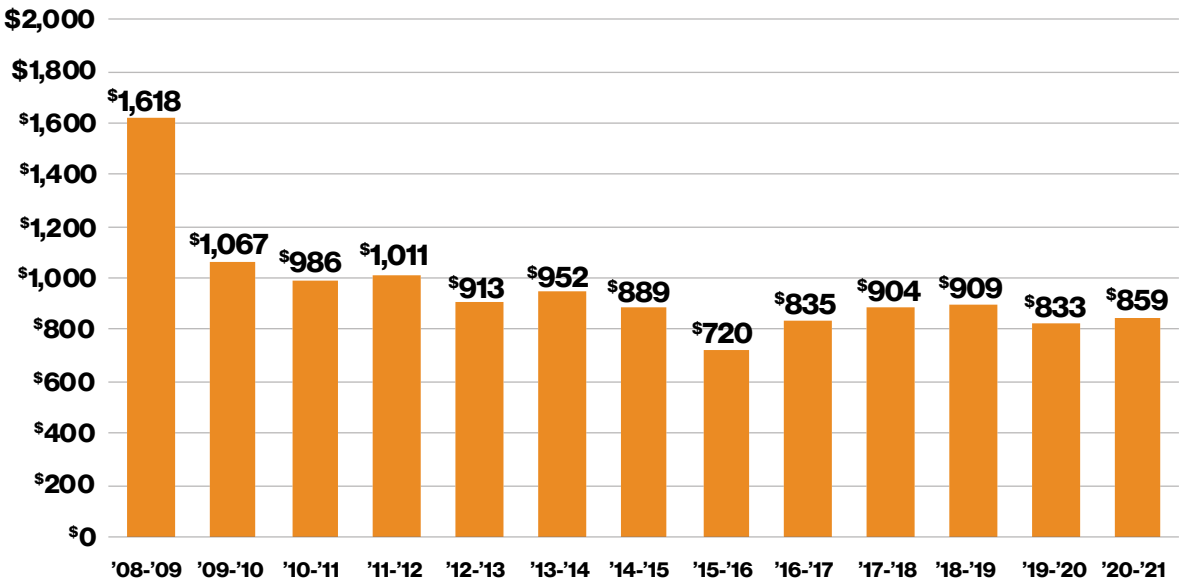


Energy Affordability

Distribution Corporation has a strong record of providing safe and reliable supply and delivery of natural gas at affordable rates. An analysis of data published by EIA found that in 2019 the Company had the lowest residential gas delivery rates in New York and Pennsylvania, and ranked #1 and #2 respectively in the entire northeastern United States. Within Distribution Corporation's New York and Pennsylvania service territories, approximately 83% and 73% of the population uses natural gas to heat their homes, respectively. Meanwhile poverty rates in our service territories, particularly in the cities of Buffalo, New York and Erie, Pennsylvania, generally trend above the national averages. As a result, reliable access to affordable natural gas 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 the shale development in the Appalachian region, which has improved the availability and affordability of natural gas supplies. Distribution Corporation also has been effective at managing its utility systems efficiently and controlling costs, which has limited the occurrence of delivery rate increases. Since 2009, the average retail residential customer in New York and Pennsylvania has seen a decrease of $830 and $759, respectively, on their annual natural gas bills. Combined, these savings amount to more than half a billion dollars annually, reducing the economic burden of energy on our customers and contributing to the local economies.

Pennsylvania Residential – Normal Average Annual Bill



External Factors Impacting Affordability

There are a number of external factors outside of our Downstream Segment's direct control that could 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 located 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. Additionally, the impacts of COVID-19 have continued to weigh on the unemployment rates for both regions. Distribution Corporation recognizes that some of our customers may be dealing with financial hardship during the pandemic, and as a result, and consistent with recently passed legislation in New York as well as other guidance from state regulators, Distribution Corporation has suspended service disconnections (except for emergency purposes), offered customers flexible repayment agreements, waived late fees when requested, and reconnected services that had been previously disconnected.

	Buffalo-Niagara, NY		Erie, PA		U.S.
	Region	City	Region	City	
Population[1]	1,127,983	255,284	269,728	95,508	328,239,523
Median Household Income[1]	$56,822	$37,354	$51,529	$37,894	$62,843
Poverty Rate[1]	12.9%	30.1%	16.6%	26.2%	10.5%
Unemployment Rate[2]		9.7%		9.8%	8.1%

1 July 2019 figures from the U.S. Census Bureau
2 December 2020 figures from the Bureau of Labor Statistics

Commodity Prices

Costs to purchase, transport, store, and deliver natural gas supplies to our Downstream Segment's local distribution system are passed along to 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 Downstream Segment's New York and Pennsylvania service territories are known for their harsh winters. Nearly all of Distribution Corporation's residential customers use natural gas for space heating. 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 daily spot markets to meet the increased customer demand. The impact of weather variations on delivery charges billed to its New York customers is mitigated by that jurisdiction's Weather Normalization Clause ("WNC"). The WNC, which covers an eight-month period during the winter heating season, is a billing mechanism that has a stabilizing effect on customers' bills by mitigating the impacts of colder weather.

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.

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 generally designed to produce a rate structure that is just and reasonable for all customers, the commissions could take certain positions or impose the recovery of costs for activities and programs outside of the Distribution Corporation's cost of service that would increase customer rates. There are a number of other circumstances where legislation and government policy at the federal, state and local levels could directly or indirectly impact our rates. These 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.

The external factors described above, which could significantly increase our rates and potentially place stress on our customers' ability to pay their monthly natural gas bills, 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 a number of customer service initiatives, such as budget billing and extending deferred payment arrangements, designed to stabilize customer bills and encourage customer payments.

The Utility has also been attentive to providing assistance for 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 $500 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 utility payment assistance that has been made available.

- **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 customers in need that 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 (1) residential, (2) commercial and (3) industrial customers, as well as transportation only services for those respective customer groups:

Utility Average Retail Gas Rates per Mcf [1,2]

	CY 2018	CY 2019	CY2020
Bundled Retail Sales[3]			
Residential	$8.34	$8.14	$7.91
Commercial	$7.44	$7.36	$7.07
Industrial	$6.90	$6.41	$6.28
Total Retail	$8.21	$8.02	$7.79
Transportation Sales			
Residential	$3.69	$3.63	$3.99
Commercial	$2.10	$2.04	$2.18
Industrial	$0.72	$0.73	$0.76
Total Transportation	$1.67	$1.61	$1.69

The following table shows the typical monthly gas bill for residential customers for (1) 50 Mcf and (2) 100 Mcf of gas delivered per year.[4]

Typical Monthly Gas Bill for Residential Customers

	CY 2018	CY 2019	CY 2020
NY Division – 50 Mcf			
Bundled Residential			
Delivery	$ 30.38	$ 30.24	$ 30.32
Supply	$ 18.97	$ 17.93	$ 14.98
Surcharges/(Refunds)[5]	$ 0.85	$ (0.38)	$ 0.02
Avg. Monthly Bill	$ 50.20	$ 47.79	$ 45.32
NY Division – 100 Mcf			
Bundled Residential			
Delivery	$ 37.36	$ 37.07	$ 37.27
Supply	$ 37.93	$ 35.86	$ 29.96
Surcharges/(Refunds)[5]	$ 1.69	$ (0.76)	$ 0.04
Avg. Monthly Bill	$ 76.98	$ 72.17	$ 67.27
PA Division – 50 Mcf			
Bundled Residential			
Delivery	$ 24.46	$ 23.77	$ 23.88
Supply[6]	$ 19.04	$ 19.13	$ 16.89
Surcharges/(Refunds)[7]	$ 0.35	$ (0.55)	$ (0.45)
Avg. Monthly Bill	$ 43.85	$ 42.35	$ 40.32
PA Division – 100 Mcf			
Bundled Residential			
Delivery	$ 34.43	$ 33.05	$ 33.26
Supply[6]	$ 38.14	$ 38.31	$ 33.84
Surcharges/(Refunds)[7]	$ 0.69	$ (1.11)	$ (0.90)
Avg. Monthly Bill	$ 73.26	$ 70.25	$ 66.20

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. New York and

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 SEC filings (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 New York Public Service Commission (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 four, and fourteen calendar years, respectively.
4 The calculation methodology used here is that which Distribution Corporation uses for reporting to state commissions and disclosure on the Company's corporate website. This methodology also better captures the impact of seasonal rates and delivery patterns, and the recovery and/or refund of regulatory deferrals.
5 Surcharge and refund items include, among other things, the recovery of the system modernization tracker and costs to administer the Conservation Incentive Program ("CIP"), and returning the benefits of tax reform to ratepayers.
6 In 2020, a portion of delivery charges for 2018 and 2019 were reallocated to Supply.
7 Surcharge and refund items include the impact of various rate riders for low income customer programs and the state tax adjustment.

Ongoing Policies and Programs to Reduce Customer Disconnections

Low Income Home Energy Assistance Program (LIHEAP)

Low-Income Customer Affordability Programs

Neighbor for Neighbor Heat Fund

Pennsylvania state laws and regulations allow Distribution Corporation to disconnect service to a customer due to non-payment, subject to certain restrictions and requirements that Distribution Corporation must carefully manage. 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 (NY SLIP) 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
- Sponsor of the National Fuel Neighbor for Neighbor program, which provides energy grants to customers with special needs.

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 (EBD) coded accounts 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.

Improving Affordability and Access to Payment Assistance

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, Distribution Corporation suspended disconnections for non-payment during calendar 2020 and, as a result, the metrics reported in the table below for the percentage of customers reconnected within 30-days is not meaningful. 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

	CY 2018	CY 2019	CY2020
New York Division			
Disconnections for Non-Payment[1]	12,003	25,973	0
Reconnections within 30-days	7,418	12,826	0
% Reconnected within 30-days	**62%**	**49%**	**–**
Pennsylvania Division			
Disconnections for Non-Payment[9]	4,865	7,533	0
Reconnections within 30-days	2,904	3,433	0
% Reconnected within 30-days[10]	**60%**	**46%**	**–**

Trends in customer disconnections are driven by a number of factors, which can vary from year to year. The disconnections in 2018 were low largely due to an internal billing system issue that re-set the collection cycles for a large population of customers. In 2019, there was an increase in disconnections as normal collections resumed and Distribution Corporation refocused its efforts and procedures around the summer disconnection and collection cycles. In 2020, disconnections were suspended as a result of the COVID-19 pandemic, thus the total disconnections for non-payment are zero.

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. The decrease in the 2020 statistics is a result of disconnections for non-payment being suspended, (and subsequently reconnections), due to the COVID-19 pandemic.

End-Use Efficiency

For nearly five decades, 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"). Adopted by the NYPSC in 2007, the CIP was the first of its kind in New York State. The CIP budget is funded by ratepayers through a monthly bill surcharge. Since inception, the Company's CIP has resulted in a cumulative total reduction of approximately 1.4 million metric tons of carbon dioxide emissions.

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 heating and water heating equipment with high efficiency appliances in single-family residential dwellings.

1 Trends in customer disconnections are driven by a number of factors, which can vary from year to year. The disconnections in 2018 were low largely due to an internal billing system issue that re-set the collection cycles for a large population of customers. In 2019, there was an increase in disconnections as normal collections resumed and Distribution Corporation refocused its efforts and procedures around the summer disconnection and collection cycles. In 2020, disconnections were suspended as a result of the COVID-19 pandemic, thus the total disconnections for non-payment are zero.

- **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 provides natural gas savings.

- **Low Income Usage Reduction Program (LIURP):** A weatherization program that is specifically designed to help low income residential customers lower 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, 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. Apart from a Low Income Usage Reduction Program, a weatherization program available to certain eligible customers with high usage, the Downstream Segment does not presently have an extensive energy efficiency program in its Pennsylvania Division. However, our Downstream Segment does regularly offer energy efficiency tips to its Pennsylvania customers, and in 2018, Pennsylvania enacted legislation giving the PaPUC express authority to approve alternative rate mechanisms for electric, natural gas, and water or wastewater utilities, and Distribution Corporation may explore the possibility of offering an energy efficiency program under such authority in a future Pennsylvania rate case.

NY CIP Gross Savings (Mcf)[1]

	CY 2018	CY 2019	CY 2020
Residential Rebate Program	116,943	153,112	181,699
NRCIP	65,422	36,760	42,195
LIURP	40,181	28,674	31,411

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 rate-payer funding for energy efficiency programs over and above current CIP budgets. Distribution Corporation expects to spend nearly $69 million on energy efficiency programs and initiatives through 2025. In line with the Climate Act's GHG reduction requirements, our Downstream Segment continues its focus on, and to direct resources to, efficiency programs and activities. Notably, for program years 2021-2025, Distribution is including a hybrid heating system, which is expected to be an effective measure for reducing GHG emissions without compromising resiliency.

Percentage of Gas Utility Revenues from Decoupled Rate Structures

Our Downstream Segment has a Revenue Decoupling Mechanism ("RDM") in place in its New York Division that 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.

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

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, in part, 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.

Decoupled Revenues as % of Total Revenues

	CY 2018	CY 2019	CY 2020
Total Utility Revenues ($000s)	$720,912	$701,610	$644,474
Decoupled Utility Revenues ($000s)	$165,283	$166,762[1]	$165,684
Decoupled Revenues as a % of Total	22.9%	23.8%	25.7%

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 WNC 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. To the extent that actual revenues are above the target, Distribution Corporation 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. Distribution Corporation 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 20-26% 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. Absent a rate case filing in either of the New York or Pennsylvania jurisdictions, the percentage range of decoupled revenues is unlikely to change significantly over the near-term.

Activity Metrics

Number of Customers

New York	CY 2018	CY 2019	CY 2020
Residential	494,954	496,318	500,300
Commercial	34,804	34,953	35,063
Industrial	432	428	427
Total Customers	**530,190**	**531,699**	**535,790**

Pennsylvania	CY 2018	CY 2019	CY 2020
Residential	195,505	195,448	197,051
Commercial	15,871	15,915	15,987
Industrial	589	594	597
Total Customers	**211,965**	**211,957**	**213,635**

Total Distribution	CY 2018	CY 2019	CY 2020
Residential	690,459	691,766	697,351
Commercial	50,675	50,868	51,050
Industrial	1,021	1,022	1,024
Total Customers	**742,155**	**743,656**	**749,425**

1 Decoupled utility revenues for CY 2019 were adjusted as a result of actual billed margin, which was unavailable at the time the 2019 report was filed.

Amount of Natural Gas Delivered (MMcf)

New York	CY 2018	CY 2019	CY 2020
Bundled Retail Sales			
Residential	44,759	46,498	43,806
Commercial	6,060	6,178	5,605
Industrial	490	479	210
Total Retail	**51,309**	**53,155**	**49,621**
Transportation Sales			
Residential	9,131	7,432	5,847
Commercial	20,572	20,489	18,248
Industrial	19,371	17,936	17,317
Total Transportation	**49,074**	**45,857**	**41,412**

Pennsylvania	CY 2018	CY 2019	CY 2020
Bundled Retail Sales			
Residential	17,348	17,026	16,107
Commercial	3,377	3,277	2,909
Industrial	193	236	263
Total Retail	**20,918**	**20,539**	**19,279**
Transportation Sales			
Residential	2,913	2,774	2,370
Commercial	6,803	6,805	6,179
Industrial	18,882	18,877	15,690
Total Transportation	**28,598**	**28,456**	**24,239**

Total Distribution	CY 2018	CY 2019	CY 2020
Bundled Retail Sales			
Residential	62,107	63,524	59,913
Commercial	9,437	9,455	8,514
Industrial	683	715	473
Total Retail	**72,227**	**73,694**	**68,900**
Transportation Sales			
Residential	12,044	10,206	8,217
Commercial	27,375	27,294	24,427
Industrial	38,253	36,813	33,007
Total Transportation	**77,672**	**74,313**	**65,651**

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, the Utility segment of National Fuel Gas Company.

Utility Distribution Pipeline Length (kilometers) – by Year [1]

	2018	2019	2020
Mains	23,426	23,466	23,510
Services	12,248	12,288	12,332
Total	35,674	35,754	35,842

Utility Transmission and Regulated Gathering Pipeline Length (kilometers) – by Year [2]

	2018	2019	2020
Transmission	109	110	110
Regulated Gathering	100	100	100

Total Utility Pipeline Length (kilometers) – by Year [3]

	2018	2019	2020
Distribution Mains (Kilometers)	23,426	23,466	23,510
Distribution Services (Number)	653,625	654,745	655,492
Distribution Services (Kilometers)	12,248	12,288	12,332
Transmission Pipelines (Kilometers)	109	110	110
Regulated Gathering Pipelines (Kilometers)	100	100	100
Total Utility Pipelines (Kilometers)	35,883	35,964	36,052

1 DOT Gas Distribution Annual Report Form PHMSA F 7100.1-1 (2020)
2 DOT Gas Transmission and Gathering Annual Report Form PHMSA F 7100.2-1 (2020)
3 DOT Annual Reports (2018-2020).

National Fuel

Midstream Segment

Greenhouse Gas Emissions

National Fuel's Midstream Segment is committed to reducing greenhouse gas emissions from its operations, and is targeting 50% reduction in its methane intensity for its Pipeline and Storage business, and a 30% reduction in methane intensity for its Gathering business, both by 2030 using a 2020 baseline.

We have numerous initiatives underway to accomplish this commitment, including our participation in the EPA's Methane Challenge Program, through which we are analyzing new and innovative approaches for further methane reductions, including technology enhancements and work practice improvements. In line with our focus on continuous improvement, in March 2019, Supply Corporation submitted a formal proposal to the EPA to initiate a Best Management Practice (BMP) for fugitive emissions at compressor stations for the transmission and storage industry segment. Supply Corporation's proposed BMP focuses on addressing specific leak sources to maximize methane emissions reductions and is based on existing EPA industry reporting data, which identifies the potential for leak mitigation and methane reduction – targeting compressor unit isolation and blowdown valve leakage. In July 2020, the EPA finalized this BMP, which both Supply Corporation and Empire adopted in September 2020.

To further our goals and objectives under the Methane Challenge Program, National Fuel appointed a Methane Challenge Implementation Manager for each Midstream Segment subsidiary, who is responsible for overseeing the implementation of the various BMP commitments, tracking of emissions reductions, and annual reporting of progress. Each subsidiary submitted its first annual progress report to the EPA in December 2020. Included in the following table is a summary of reported methane reductions for reporting year 2019.

2019 Reported Methane Reductions via EPA's Methane Challenge (Metric Tons)[1,2,3]

	CH_4	CO_2e
Empire	–	–
Supply	343	9,604
Midstream Company	169	4,732
Midstream Segment	**512**	**14,336**

In addition to our Methane Challenge commitments, our Midstream Segment employs the following regulatory and voluntary measures to minimize methane emissions:

Measures to minimize methane emissions	Regulatory	Voluntary
Minimize pipeline blowdowns		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 and Empire's use of vent gas recovery ("VGR") systems for planned compressor blowdown events as several facilities whenever 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	

Our Supply Corporation and Empire subsidiaries are also members of INGAA and are active participants in INGAA's Environmental Committee. These subsidiaries co-chair the committee's GHG Task Force, an industry trade group that seeks to develop and share best practices among industry peers. In addition, Supply Corporation and Empire are committed to INGAA's voluntary Methane Emissions Commitments.

1 EPA's Methane Challenge Program submission window for Reporting Year 2019 did not open until mid-October for each of National Fuel's Midstream segment subsidiaries. It is anticipated Reporting Year 2020 will follow the same timeline; reductions from Reporting Year 2020 will be noted in next year's report. For reporting year 2019, the reductions came from the selected BMPs under the Methane Challenge program for pneumatic devices and rod packing. CO_2e values have been calculated based on those values in accordance with the published 100-year time horizon global warming potential (GWP) values from the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (AR5, 2014) as preferred by SASB.
2 For reporting year 2019, the reductions came from the selected BMPs under the Methane Challenge program for pneumatic devices and rod packing.
3 CO_2e values have been calculated based on those values in accordance with the published 100-year time horizon global warming potential (GWP) values from the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (AR5, 2014) as preferred by SASB.

Scope 1 Greenhouse Gas Emissions

Our Midstream Segment has expanded our GHG emissions monitoring and reporting to include stationary and fugitive sources at facilities both subject and not subject to reporting under the U.S. EPA's Greenhouse Gas Reporting Program (GHGRP) as well as the sources covered under the American Gas Association (AGA) Natural Gas Sustainability Initiative (NGSI) protocol for all transmission compressor stations and natural gas storage facilities, and facilities associated with natural gas gathering and boosting systems.[1,2] In addition, the Midstream Segment is including GHG emissions from mobile sources/fleet vehicles, and office buildings in its gross global Scope 1 emissions total.

Global Scope 1 emissions data is provided in units of metric tons on a carbon dioxide equivalent (CO_2e) basis, as the sum of three of the seven GHG pollutants covered under the Kyoto Protocol (CO_2, CH_4, and N_2O).[3,4,5] In addition to gross global Scope 1 emissions, we are providing the percentage of those emissions from methane. Gross emissions are GHGs emitted to the atmosphere before accounting for GHG reduction activities, offsets, or other adjustments that have reduced or compensated for emissions.

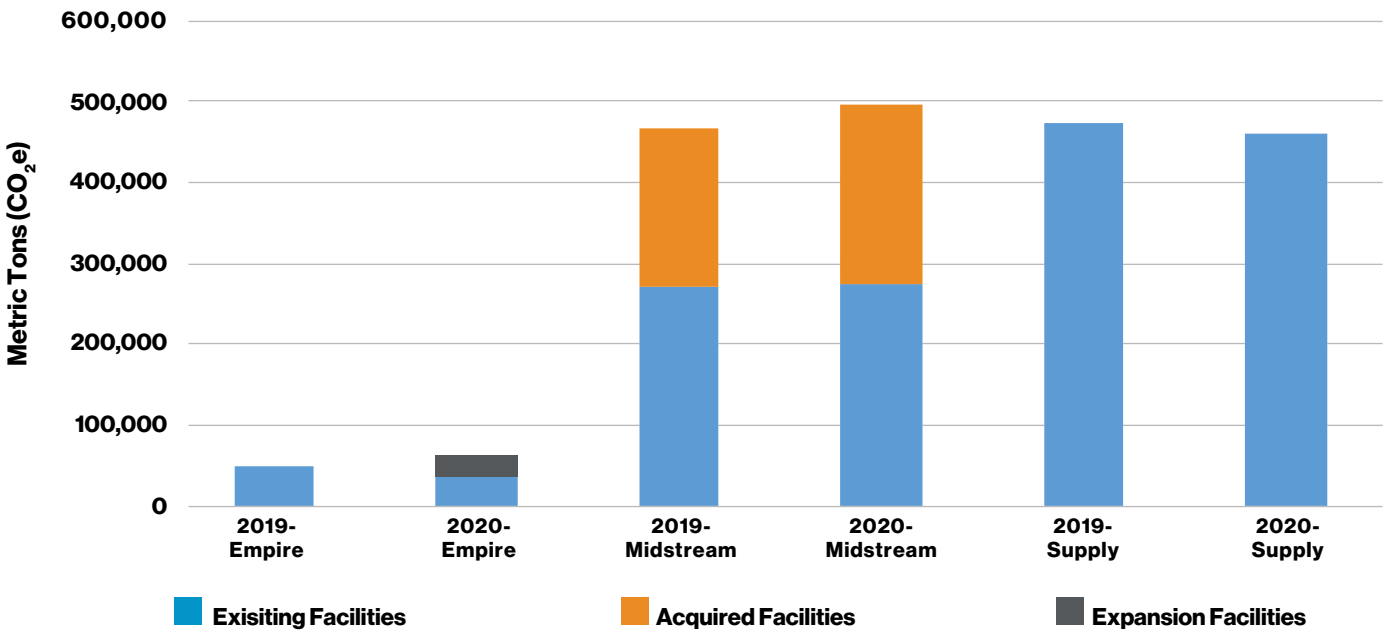
Scope 1 Greenhouse Gas Emissions (Metric Tons CO_2e)

		2019[6]	2020
Empire	EPA Subpart W Mandatory Reporting	27,863	31,145
	Additional EPA Subpart W Sources[7]	17,454	24,129
	Other Sources[8]	2,549	4,605
	Total Empire	47,866	59,879
Supply	EPA Subpart W Mandatory Reporting	301,112[9]	288,389
	Additional EPA Subpart W Sources	163,878	161,131
	Other Sources	9,373	10,196
	Total Supply	474,363	459,716
Midstream Company	EPA Subpart W Mandatory Reporting	466,712[10]	487,158
	Additional EPA Subpart W Sources	1,134	8,221
	Other Sources	592	615
	Total Midstream Company	468,438	495,994
Midstream Segment	EPA Subpart W Mandatory Reporting	795,687	806,692
	Additional EPA Subpart W Sources	182,466	193,481
	Other Sources	12,514	15,416
	Total Midstream Segment	990,667	1,015,589

As shown in the graphic on the following page, our 2020 reporting includes emissions from two newly constructed facilities on the Company's Empire North expansion project, and the facilities acquired from Royal Dutch Shell in July 2020 (the "Acquired Tioga County Assets").

1 Under the GHGRP, our Midstream Segment's facilities are subject to 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 carbon dioxide equivalent (CO_2e) (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 CO_2e are not subject to reporting of GHG emissions.
2 Midstream Segment has quantified emissions from source categories identified by EPA in the GHG Mandatory Reporting Rule under 40 CFR 98 Subpart W.
3 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.
4 CO_2e values have been calculated based on those values in accordance with the published 100-year time horizon global warming potential (GWP) values from the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (AR5, 2014) as preferred by SASB. The U.S. EPA requires CO_2e to be calculated using IPCC Fourth Assessment Report (AR4) under the GHGRP.
5 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).
6 Values for 2019 are "restated" from the original RY2019 disclosure. 2019 data has been revised to include the same source categories as 2020 wherever possible to provide a consistent basis for year-over-year disclosure.
7 EPA Subpart W sources that do not reach minimum threshold to mandate annual reporting.
8 Other sources included by National Gas Sustainability Initiative (NGSI), along with fleet and office buildings.
9 Minor adjustment due to a typo in 2019 disclosure.
10 Adjustment to account for Acquired Tioga County Assets.

Scope 1 Emissions



Scope 1 Methane Emissions (Metric Tons CH_4 as CO_2e)

		2019	2020
Empire	EPA Subpart W Mandatory Reporting	3,070	3,573
	Additional EPA Subpart W Sources[1]	17,436	4,011
	Other Sources[2]	2,546	4,600
	Total Empire	23,052	12,184
Supply	EPA Subpart W Mandatory Reporting	133,621	111,394
	Additional EPA Subpart W Sources	131,649	129,023
	Other Sources	6,824	7,008
	Total Supply	272,094	247,425
Midstream Company	EPA Subpart W Mandatory Reporting	164,273	138,570
	Additional EPA Subpart W Sources	1,031	1,217
	Other Sources	502	511
	Total Midstream Company	165,806	140,298
Midstream Segment	EPA Subpart W Mandatory Reporting	300,964	253,537
	Additional EPA Subpart W Sources	150,116	134,251
	Other Sources	9,872	12,119
	Total Midstream Segment	460,952	399,907

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 CO_2e emissions overall is from combustion sources, primarily compressor station engines, with respect to which our Midstream Segment utilizes various mitigation strategies to minimize CO_2 emissions. In 2020, Empire finished construction and placed into service its first electric-motor-driven compressor station as part of the Company's Empire North project. We will continue to evaluate the environmental benefits and the technical and economic feasibility of this technology for similar projects in the future, where power is available and reliable. As illustrated in this table, the next largest source categories contributing to overall GHG emissions are vented sources (which would include, among other things, pneumatic devices) and fugitive sources (which would include, among other things, compressor seal/rod packing leaks and compressor unit isolation and blowdown valve leakage). For this reason, we strategically selected BMPs under the Methane Challenge program for pneumatic devices and rod packing for methane reduction strategies.

1 EPA Subpart W sources that do not reach minimum threshold to mandate annual reporting.
2 Other sources included by National Gas Sustainability Initiative (NGSI), along with fleet and office buildings.

Reported Scope 1 GHG Emissions by Source Category (metric tons CO_2e)

		2019	2020
Empire	Flared Hydrocarbons	1	3
	Combustion Sources	24,805	47,710
	Process Emissions	–	–
	Vented Emissions	18,856	4,258
	Fugitive Emissions	4,205	7,908
	Total Empire	47,867	59,879
Supply	Flared Hydrocarbons	410	386
	Combustion Sources	201,835	211,903
	Process Emissions	179	357
	Vented Emissions	93,916	87,991
	Fugitive Emissions	178,023	159,079
	Total Supply	474,363	459,716
Midstream Company	Flared Hydrocarbons	–	4,011
	Combustion Sources	300,909	354,283
	Process Emissions	80,619	41,816
	Vented Emissions	83,860	92,312
	Fugitive Emissions	3,050	3,571
	Total Midstream Company	468,438	495,993
Midstream Segment	Flared Hydrocarbons	411	4,400
	Combustion Sources	527,549	613,896
	Process Emissions	80,798	42,173
	Vented Emissions	196,632	184,561
	Fugitive Emissions	185,278	170,558
	Total Midstream Segment	990,668	1,015,588

Scope 2 – Greenhouse Gas Emissions

New to this reporting year, our Midstream Segment is providing Scope 2, purchased electricity, emissions data from our operating facilities.[1]

Scope 2 Emissions (Metric Tons CO_2e)

	2020
Empire	865
Supply	4,002
Midstream Company	618
Midstream Segment	**5,485**

Air Quality

Criteria Pollutants (Metric Tons) - NO_x, SO_x, Volatile Organic Compounds (VOCs), and Particulate Matter (PM_{10})

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 meeting specified reporting criteria, which varies by state (i.e., New York Department of Environmental Conservation and Pennsylvania Department of Environmental Protection). This includes all Midstream Segment compressor stations and other facilities with stationary sources (e.g., interconnects with engines or dehydration units) in Pennsylvania, as well as federal Clean Air Act Title V major source facilities in New York (i.e., any facility with potential to emit more than 100 tons per year of any regulated pollutant).

This year we are expanding the disclosed emissions to include facilities that are not subject to reporting requirements for emissions from stationary and fugitive emission sources at our operating facilities. This additional disclosure now includes all Midstream Segment compressor stations in New York (i.e., the compressor stations that are considered Title V minor source facilities). Furthermore, this disclosure includes emissions from our fleet vehicles.

Emissions are calculated using the best available data in accordance with agency guidelines and accepted methods, which include:

- 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;

1 Scope 2 emissions were calculated using Sub-Region Emission Factors from US EPA GRID, 2019 Summary Tables, https://www.epa.gov/egrid/download-data, downloaded 4/30/21.

- Emissions modeling software (e.g., GRI-GLYCalc, TankESP, ProMax, etc.); and
- Published emission factors (e.g., Manufacturer, AP-42, 40 CFR 98 Subpart W).

We are committed to minimizing emissions by operating our facilities in a manner consistent with applicable air quality control standards. All new sources are designed to be controlled to stringent Best Available Technology (BAT) or better emission standards. Existing sources at Title V facilities have incorporated requirements to meet Reasonably Available Control Technology (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 will ultimately reduce methane and VOC emissions over the upcoming years. As a Partner under this program, we have committed the personnel and financial resources to implement company-wide BMPs that go beyond regulatory requirements to mitigate emissions from key sources associated with our operations.

Included in the table that follows are emissions from sources at all Midstream Segment Pennsylvania and New York facilities and fleet vehicles.

Air Emissions (metric tons)[1234]

		2019	2020
Empire	NO_X	–	18
	SO_X	–	2
	VOC	–	3
	PM_{10}	–	1
Supply	NO_X	348	448
	SO_X	2	4
	VOC	268	260
	PM_{10}	22	25
Midstream Company[5]	NO_X	253	317
	SO_X	2	3
	VOC	66	91
	PM_{10}	13	13
Midstream Segment	NO_X	601	783
	SO_X	4	9
	VOC	334	354
	PM_{10}	35	39

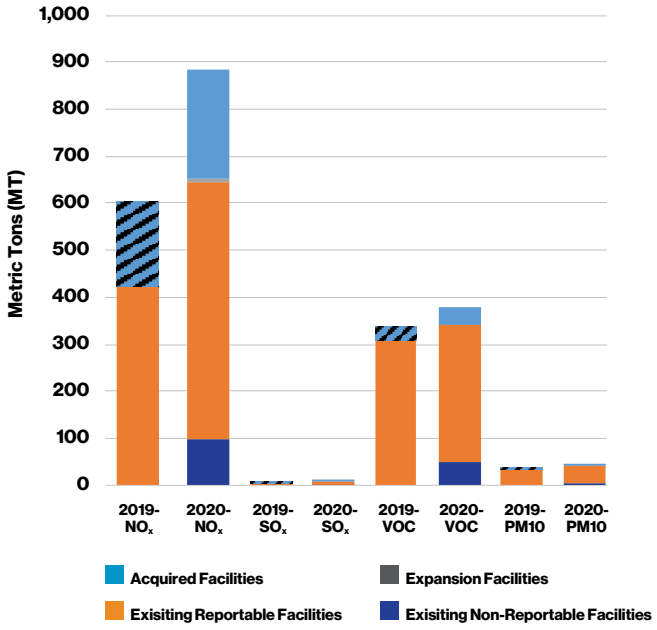
As shown in the graphic on the following page, the increase in Midstream Segment emissions reported in 2020 is primarily due to the Acquired Tioga County Assets. In 2019, Midstream Company did not own or operate the Acquired Tioga County Assets, thus the acquired facilities category is shown for trending purposes only. The other emissions increases in 2020 can be attributed to reporting additional existing non-reportable facilities, (i.e., NY compressor stations) and Empire placing into service two (2) compressor stations.

"We continue to analyze new and innovative approaches to further our emissions reduction commitments, including technology enhancements and work practice improvements."

Joshua Ennis
Manager of Engineering Services – Air Quality and Environmental

1 Included are air emissions from all Midstream Segment compressor stations and other facilities with stationary sources (e.g., interconnects with engines or dehydration units) in PA, and all Midstream Segment compressor stations in NY. Facility emissions are calculated in accordance with standard agency-accepted methods using best available data. Fleet emissions are calculated using EPA MOVES3.
2 Included are air emissions from all Midstream Segment compressor stations in NY.
3 Facility emissions are calculated in accordance with standard agency-accepted methods using best available data.
4 Fleet emissions are calculated using EPA MOVES3.
5 2019 emissions for the Midstream Company were restated to include emissions for the Acquired Tioga County Assets. The 2019 emissions were not reported by National Fuel.

2019 vs. 2020 Air Emissions[1]



Ecological Impacts

Environmental Management Policies and Practices

At National Fuel, our goal is to meet the needs of our customers through safe and reliable transportation of natural gas while adhering to environmental compliance. As such, the key to a successful operation is a well-maintained and dependable infrastructure of integrated natural gas facilities. To accommodate the ongoing operation and new opportunities for natural gas, maintenance and expansion projects are necessary. The construction of these projects often entails the proper coordination with local, state, and federal authorities, notably environmental agencies. The National Fuel Environmental Team helps to ensure these important, robust and effective environmental management policies and practices are implemented.

Project Planning and Development

For each project, our Environmental Team takes into account the potential for environmental impacts. In addition to following the provisions of Company-specific 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 Procedure ("ESCAMP"), a great level of effort is undertaken early on to evaluate potential impacts of project activities, the best measures to avoid these impacts, and where unavoidable, how to properly mitigate them. These early efforts are facilitated through coordination with applicable environmental permitting agencies and industry experts who specialize in areas that include but are not limited to, the following:

- air emissions;
- soil and geology;
- noise impacts;
- spill prevention and response procedures;
- water resource identification and delineation;
- threatened and endangered species and critical habitat survey;
- waste generation;
- cultural and historic resource identification; and
- surveying, routing, and siting practices to avoid or minimize impacts to identified resources.

The result of this coordination and consultation effort is the preparation, and ultimate implementation, of project-specific plans that take into account the considerations described above, in addition to any others identified during the project planning process.

1 For the acquired Tioga facilities, the 2019 values represented were not reported by National Fuel, as denoted by cross-hatching.

Specific Considerations and Stakeholder Engagement

When developing a project scope and plan for the construction of a facility, we routinely engage in the following:

Environmental Stakeholder Engagement

- Early identification of, and coordination with private, local, state, and federal agency authorities/stakeholders;
- Engagement with applicable environmental 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, civil engineering, and steep slope stabilization/mitigation concerns; and
- Engagement in project routing and rerouting exercises to assist with resource avoidance, impact minimization, and development of project-specific alternatives analyses, where practicable.

Landowner Engagement

- Early coordination, negotiation, and issue-resolution with affected landowners , and others that may be potentially affected, by the proposed project; and
- Participation in public meetings to discuss potential short term and long term environmental and landowner considerations with the general public, local, state, and federal authorities, as well as any other stakeholders.

These practices are implemented as a means to minimize impact to threatened and endangered species, natural or historic resources, and ensure project stakeholders are well informed and their concerns are appropriately addressed.

Project Construction and Restoration

Pre-Construction

Once all applicable landowner agreements and environmental approvals have been acquired, the project moves into the pre-construction phase. At this point, a thorough review of all finalized approvals and agreements is conducted at pre-construction conferences. These are often held with permitting agencies present, to review the project-specific considerations such as permit conditions and provisions, construction techniques, timelines, and restoration expectations. Additionally, this is where construction plan implementation, monitoring, and remediation procedures are discussed in detail with the project's internal project management personnel and with the general contractor and their sub-contractor(s), where applicable. Often, to facilitate transmittal of important information relating to environmental permit/approval and/or other stakeholder requirements, we host a formal pre-construction training, and require all contractor, subcontractor and company personnel who will have involvement with the project to attend and complete the training.

"Our team focuses on environmental stewardship through evaluating potential environmental impacts of project activities, and the best measures to avoid and mitigate these impacts while protecting the surrounding environment."

Victoria Liberty
Environmental Engineer

Construction

Once construction commences, our Midstream Segment demands full compliance and implementation of all applicable environmental management policies and practices. These include, but are not limited to, the previously mentioned internal ESCAMP and EDM documents, which address applicable local, state, and federal regulatory requirements, principles, policies, and BMPs, also, site-specific erosion and sedimentation control, site restoration, and/or post-construction stormwater management plans, often developed by third-party environmental consulting firms utilizing applicable local, state, and federal codes and guidance.

Inspection

Throughout construction, company and contractor personnel conduct thorough inspections of the project site to ensure that all compliance requirements are being met. It is through this inspection, construction management overview, and thorough internal review of these efforts, that a project-wide culture of environmental protection, redundancy, and transparency is established. Similarly, as we are subject to frequent agency inspections on our project sites, we view these agency-led and often unannounced inspections as a useful platform to communicate project goals and demonstrate our compliance expectations with the respective agencies themselves.

High Biodiversity and Critical Habitat Protection

As identified through our project coordination process, every reasonable effort is made to avoid areas identified as high value in terms of habitat for protected, threatened, and endangered species, or generally high ecological value for species richness or diversity, such as scrub shrub or forested wetlands. For example, with respect to threatened, endangered, and protected species, we consult directly with agencies such as the U.S. Fish and Wildlife Service, the New York Natural Heritage Program, the PA Fish and Boat Commission, PA Game Commission, and PA Department of Conservation and Natural Resources. These consultations yield critical habitat location information, survey requirements, and recommendations for avoidance and impact minimization for species such as the timber rattlesnake, northern long-eared bat, northern riffleshell clam, blue-spotted salamander, and the log-fern. Where these areas cannot be avoided, enhanced cooperation and planning is undertaken and measures are designed that either meet or exceed the mitigation standards provided by the permitting agency. Proper tracking, monitoring, and completion of these mitigation efforts often spans several years, which our Midstream Segment views as a vital component of the project-closeout process.

Restoration

At National Fuel, one of the most important goals is to retain, strengthen, and enhance positive relationships with all project stakeholders. To help accomplish this goal, we pride ourselves on delivering on the promises made to agency personnel and landowners when it comes to restoring resources and property to a condition as good, or better, than prior to project commencement. Landowner discussion of the restoration of their property with company construction management staff, inspection personnel, and land agents is encouraged and facilitated, as are mechanisms for landowners to report any grievances if such restoration does not meet their expectations. From an agency perspective, many projects require follow-up inspections, monitoring, and reporting on the status of vegetative growth, invasive species mitigation, stream/wetland restoration, and post-construction stormwater control effectiveness, in addition to the adherence to all agency approved permits and plans. As a result of agency cooperation and initiatives taken in many cases, the restoration of a project site may enhance existing habitat through the utilization of special wetland seeding and planting practices, additional species habitat creation through proper placement of timber, brush, stone, and streambank stabilization techniques that may exceed past the limits of our right-of-way to ensure proper remediation and reduction of sedimentation to adjacent waterbodies.

Facility Operation

After construction is completed and all associated areas have been restored, the facility moves into the operational phase. This is where the initial overall goals of the project can be realized. During this phase, routine maintenance and monitoring practices help ensure that the installed facilities remain incorporated into, and often enhance, the natural environment. Within the pipeline right-of-way, in addition to habitat creation through plantings or creation of natural structures, invasive species mitigation efforts and timely mowing and ROW maintenance practices ensure that these often remote areas flourish with native plant species, including pollinators, and also provide habitat for migratory bird species, sensitive plant and animal species, and allow for the proper establishment of valuable wetland and stream resources.

As part of an internal initiative, the Midstream segment is currently incorporating and planting pollinator seed mixes during restoration within project ROWs in upland areas to enhance native pollinators and Monarch Butterfly habitat. Seed mixes have been accepted and approved by applicable stakeholders. The acreage of pollinator seed mix planted along the ROW will be expanded in future years. The Midstream Segment is applying for enrollment in the Nationwide Candidate Conservation Agreement with Assurances (CCAA) for the Monarch Butterfly on energy and transportation lands. The intent of the CCAA Program is to enhance and expand the available monarch habitat by adopting the appropriate conservation measures that promote sustainable breeding, foraging, and habitat, such as milkweed, and nectar plants.

Biodiversity Enhancement & Habitat Conservation

In addition to the routine restoration and maintenance procedures our Midstream Segment undertakes to retain and protect habitat within our operating area, there are often additional opportunities to further engage with applicable stakeholders to create, conserve, or enhance natural areas, or otherwise offer additional ecological protection. In addition to those disclosed in the Company's 2019 Report, recent examples include:

- **Farmington Compressor Station (2020)** – As part of the Empire North Project, Empire Pipeline, Inc. installed two 16,000 HP electric-motor driven centrifugal compressor packages to provide abundant, reliable, and economic supplies of regionally produced natural gas into the interstate pipeline system, and eliminating direct combustion emissions from these expanded operations. Additionally, as part of the stormwater management design for the location, Empire entered 3.6 acres of adjacent, company-owned property into riparian buffer conservation agreements, thereby further protecting a nearby stream and its adjacent riparian area into the future. Lastly, the physical appearance of this station, along with its companion station approximately 70 miles south, were both designed to blend in with the local aesthetic, comprised, in large part, of agricultural and rural communities.

- **Creation of Timber Rattlesnake Habitat (2020)** – During the preliminary design phase of the Alta Pipeline Installation Project (Midstream Company) and the Brockway Modernization Project (Supply Corporation), species habitat surveys for the timber rattlesnake (Crotalus horridus) were conducted. Habitat areas identified proximal to the project corridor were considered when planning the alignment and associated workspace. Additional best management practices and conservation measures were implemented during construction. On both projects, the Midstream Segment hired a full-time, qualified, biological monitor to handle timber rattlesnakes encountered during the species' active season throughout construction. The Alta Pipeline Installation Project created nearly two acres of new rattlesnake gestation habitat adjacent to the project corridor. The Brockway Modernization Project created approximately two hundred feet of rattlesnake basking habitat in addition to what was required by the PA Fish and Boat Commission.

- **Former Heath Station Fish Nursery** – Supply Corporation signed an agreement in 2017 with the Heath Township Sportsman Club to allow continued access and use of land at the former Supply Corporation Heath Compressor Station for a fish nursery.

Example of a restored right-of-way (shown on page 80 while under construction).

- **Planting of Pollinator Seed Mix**

  — **Monarch Butterfly Habitat:** In 2020, the Midstream Segment planted approximately 72 acres of native pollinator seed mixes, such as nectar producing plants and milkweed during restoration of active projects in both NY and PA.

  — **Elk State Forest Native Planting:** In addition, the Midstream Segment continues to use an overseeding technique to replant existing vegetated right-of-ways (ROW) with native pollinator seed mixes. This is a joint effort with the Pennsylvania Department of Conversation and Natural Resources (DCNR) to enhance habitat and diversity along existing ROWs. In 2019, three areas along ROWs were overseeded totaling 2.0 acres and two areas totaling 3.28 acres were overseeded in 2020. DCNR noted an increase in use of the overseeded areas by wildlife and pollinators from August to December. The Midstream Segment intends to continue to work with DCNR to introduce pollinator mixes along existing vegetated areas of the ROW to promote plant diversity.

Land Owned, Leased, or Operated Located Within Sites with Protected Conservation Status or Endangered Species Habitat (acres)

Our Midstream Segment strives to minimize impacts to protected conservation areas and endangered species habitat. This is accomplished through continual agency consultation, a thorough analysis of appropriate avoidance, minimization, and mitigation measures. Through implementation of modified construction techniques, we minimize species habitat impacts. 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 taking into consideration the effects on the environment and sensitive areas.

The following table shows the percentage of land operated near or within areas of protected conservation status or critical endangered species habitat ("Designated Areas"). Although approximately 47.6% of land that our Midstream Segment owns, leases, and operates is near (within 5 kilometers of) a Designated Area, only approximately 1.5% 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[4]	% of Total
Empire	1,636	987	60%	47	3%
Supply	12,839	6,243	49%	202	2%
Midstream Company[5]	1,705	473	28%	0	0%
Midstream Segment	16,180	7,703	48%	249	2%

Acreage Disturbed and Restored

The table provided below, 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 the calendar year of 2020. 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 generally conducted after April 1. National Fuel's 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.

Acreage Disturbed and Restored

	Acres not Permanently Restored from prior years[6]	Acres Disturbed in current year	Total Acres Impacted	Acres Permanently Restored in current year[7]	% of Impacted Area Temporarily Restored in current year[8]	% of Impacted Area Permanently Restored in current year
Empire	21	–	21	21	0%	100%
Supply	73[9]	147	220	211	4%	96%
Midstream Company	60	116	176	168	4%	96%
Midstream Segment	154	263	417	400	4%	96%

1 Operating Footprint includes acreage that is owned, leased and operated, and excludes land that is owned but not operated. Total acres includes 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 Acreage within 5 kilometers of the boundary of lands designated as a protected conservation area or as endangered species habitat.
3 World Database on Protected Areas (WDPA) and Ramsar Wetlands of International Importance data was used to determine areas of protected conversation 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 27, 2021.
4 Acreage within the boundary of lands designated as a protected conservation area or as endangered species habitat.
5 The acquisition of Shell's gathering assets in Pennsylvania, which closed on July 31, 2020, is included.
6 Projects requiring a 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).7
7 Includes acreage associated with projects that commenced permanent restoration in 2020. This includes initiating permanent restoration on projects that were constructed in 2019 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.
8 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, generally after April 1st.
9 In the Company's 2019 Report, 70.9 acres were reported as acres impacted requiring permanent restoration for Supply. There were 2.3 acres disturbed that were not accounted for in the 2019 Report that are captured in the 2020 Report as acreage requiring permanent stabilization at the start of the 2020 calendar year.

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 are in place to prevent spills from occurring and give guidance on procedures to follow to remediate a spill. In the event a spill or leak occurs, personnel 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 table below reports the number, volume of spills reported, volume of spills recovered, and volume of spills that impacted unusually sensitive resources in 2019 and 2020.

	2019	2020
Number of Spills Greater than 1 bbl[1]	0	2
Total Volume of Spills Reported (bbl)	Not applicable	3.69
Total Volume of Spills Recovered[2] (bbl)	Not applicable	3.67
Total Volume of Spills Occurring in the Artic[3]	Not applicable	Not applicable
Total Volume of Spills Impacting Unusually Sensitive Resources (bbl)[4]	Not applicable	2.38

Operational Safety, Emergency Preparedness & Response

SASB EM-MD-540a.1, EM-MD-540a.2, EM-MD-540a.3, EM-MD-540a.4

The Company's highest priority is the safety of our customers, employees and the communities we serve. Our Midstream Segment's pipeline system is sizable, and therefore requires our unwavering attention, which is why we have worked hard to establish a culture that embraces continuous improvement in all aspects of safety.

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 U.S. Department of Transportation (DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA) Reportable Pipeline Incidents, Corrective Action Orders and Notices of Probable Violation for our Midstream Segment initiated during the period 2018 through 2020.

Midstream Segment Incident and Compliance Summary

	2018	2019	2020
Reportable Onshore Gas Transmission Pipeline Incidents	2	0	0
% Significant[5] Onshore Gas Transmission Pipeline Incidents	0%	0%	0%
Corrective Action Order Cases Initiated	0	0	0
Notices of Probable Violation Cases Initiated	0	0	0

During the three (3) year period 2018 through 2020, our Midstream Segment had two (2) natural gas pipeline incidents reported to PHMSA, as defined and reported in accordance with 49 CFR §191.

1 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.
2 The amount 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.
3 The Midstream Segment does not operate in the Artic, which is considered to be the area north of the Arctic Circle
4 Unusually Sensitive Areas in the U.S. is characterized using the definition provided by PHMSA.
5 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.

Midstream Segment Transmission Pipeline Inspection[1]

With respect to 49 CFR §192, Gas Transmission Pipeline Integrity Management compliance, our Midstream Segment's transmission pipelines are operated under the National Fuel Gas Company Transmission Pipeline Integrity Management Program.

	2018	2019	2020
Transmission Pipelines (Kilometers)	3,110	3,094	3,097
Pipelines Inspected (Kilometers)[2]	472	285	110
% of Pipelines Inspected	15.2%	9.2%	3.6%

Safety Management Systems

Our pipeline and natural gas-related facilities are built to meet or exceed a comprehensive set of construction standards and regulatory requirements. 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 strives to meet or exceed 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 value community perspective, and have extensive and transparent outreach to stakeholders involved in or affected by pipeline construction activities.

In addition to the Safety Management Systems and Programs explained below, 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

According to PHMSA, pipelines are the safest, most environmentally-friendly, and most efficient and reliable mode of transportation for gas and hazardous liquids . Although rare, pipeline accidents, including ruptures, can and do occur, in which case our Midstream Segment has implemented an ongoing program to mitigate the potential effects by installing remote control valves ("RCVs") to protect higher populated areas. RCV's allow for a rapid shutdown of pipeline facilities when an incident has been confirmed. Our Midstream Segment currently has 125 RCV's across our systems designed to stop the flow of gas in the event of an emergency.

System Modernization

Corrosion, together with manufacturing and construction related defects, often associated with early vintage pipelines, are leading causes of significant incidents on onshore transmission pipelines. To reduce the risk associated with these 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 5-years, the Midstream Segment has invested over $355 million improving system safety, reliability and environmental compliance, including the replacement of 200 kilometers of bare steel and wrought iron transmission pipelines and modernization of compression facilities to employ best available technologies.

1 PHMSA 2019 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.

Leak Patrol and Surveillance

Our Midstream Segment devotes considerable resources to leak patrol and surveillance of its high-pressure pipelines. 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.

Facility Design & Construction Management

To ensure safety and quality during construction and post construction facility operations National Fuel maintains a robust construction management program and processes. Our program is designed to ensure that the facilities we build will provide a lifetime of safe and reliable service.

Facility Design & Construction Management Major Elements

- Construction Inspection Training program for all inspectors;
- Design and Construction Specifications and Procedures;
- Insuring quality materials through purchasing from an approved manufacturers list, placing inspectors at manufacturing plant facilities and conducting factory acceptance tests of critical highly engineered manufactured equipment;
- All Steel Transmission Facility Inspectors Certified to API 1169;
- Certified Welding Inspection ("CWI") training for select individuals;
- Design and testing protocols for remote control valve installations;
- Construction Quality Management System including internal construction audits and lessons learned;
- Periodic audits of radiography and other non-destructive examination procedures and results by 3rd 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;
- Preconstruction planning checklist to ensure personnel qualifications and adherence to project specific commissioning and abandonment plan; and
- Comprehensive commissioning and start-up procedures.

Construction Quality Management System

The 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. The CQMS plan is comprised of several key elements:

- **Internal Construction Audits/Assessments:** The 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, it may be reported 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 a deviation from a specification or procedure and is typically found after construction or cannot be "immediately" corrected or a deviation from specification or procedure that is deemed acceptable using sound engineering judgement and an appropriate approval process.

- **Quality Moment Distribution:** 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.

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, evaluate and mitigate threats in order to validate the integrity of gas transmission pipelines in High Consequence Areas (HCAs), including certain populated and occupied areas.

The National Fuel TIMP Plan includes elements and comprehensive procedures which ensure a consistent and thorough approach to identifying and managing threats 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	
• 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;	• 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 1,382 kilometers of pipelines which include 335 kilometers of HCAs and cover over 90% of the population living, working or congregating within the potential impact radius of our transmission pipelines. These assessments are generally conducted every 7-years or less using one of the following inspection methods, selected based on the threats to the pipeline:

- **In-line Inspection ("ILI"):** uses electronic inspection tools called "smart pigs" which are propelled through the line using gas pressure or sometimes air pressure. The sensors on the smart pig are able to detect dents, internal and external corrosion, 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 generally to 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 areas of 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 ensure the integrity of the pipeline.

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 inline inspection (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 (MFL) and deformation tools to include the use of ultrasonic technology (UT), hard spot detection, and inertial measurement units (IMU), with electromagnetic acoustic transducer (EMAT) technology expected to be used in the near future. 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.

In addition to a robust ILI program, National Fuel is expanding its long standing Existing Facility Analysis (EFA) 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.

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.

PHMSA Mega Rule Compliance

On October 1, 2019 PHMSA published the Pipeline Safety: Safety of Gas Transmission Pipelines: MAOP Reconfirmation, Expansion of Assessment Requirements, and Other Related Amendments final rule. This final rule is the first of a three part rulemaking proposed by PHMSA known as the "Mega Rule", which is arguably the most significant PHMSA rulemaking since 49 CFR §192 was published in 1970. The three major components of the Final Rule require Maximum Allowable Operating Pressure (MAOP) reconfirmation, expansion of assessment requirements to locations outside of High Consequence Areas (HCA), and verification of pipeline material properties and attributes, for certain pipelines in higher populated areas.

Mega Rule Impacts		
MAOP Reconfirmation	Assessments Beyond HCA's	Material Verification
30 km	146 km	322 km

Underground Storage Integrity

National Fuel developed the first underground natural gas storage facility in the U.S. in 1916. Now as operator of 29 storage fields and over 100 years of experience, our 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, our 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.

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 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 tool down the wellbore to provide important information about the well. The 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.

Our Supply Corporation has been running electronic logging tools to inspect storage well casing integrity since the early 1970's. This casing inspection logging program targets running 75 casing integrity logs each fiscal year. Through 2019, nearly 83% of our storage wells have had casing inspection logs, with inspection of 100% of our storage wells scheduled to be completed by 2023.

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. The publish date is scheduled for 2022.

Underground Storage Facility Attributes and Casing Inspections (2018 - 2020)

Fields Operated	Capacity (Top gas) Bcf	Wells Operated	Casing Inspections		
			FY2018	FY2019	FY2020
29	81.8	1,170	110	95	79

Well Plugging & 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.

Through 2020, Supply Corporation has plugged and abandoned a total of 20 wells with another 8 wells scheduled for abandonment by the end of calendar year 2021 (see table below). The Well Plugging and Decommissioning Program has reduced the overall risk of 9 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 – 2021)

	2017	2018	2019	2020	2021
Plugged wells due to integrity related concerns	4	3	6	7	8

Competitive Behavior

Our Midstream Segment had no penalties in fiscal year 2020 related to unfair pricing, discriminatory service, or market manipulation from the Federal Energy Regulatory Commission (FERC), the Fair Trade Commission (FTC) or the Commodity Futures Trading Commission (CFTC). The Company has a robust compliance program and trains employees annually to address applicable regulations related to these issues.

Activity Metrics

Volume of Natural Gas Transported

For this reporting year, National Fuel is providing the total million standard cubic feet (MMcf) of natural gas transported by Supply Corporation, Empire, and Midstream Company owned and operated pipelines in the below table.

2020 MMcf of Natural Gas Transported

	Natural Gas Throughput (MMcf)[1,2]	Regulated Transmission Pipelines (Kilometers)[3]	Total Pipelines (Kilometers)[4]	Compression Horsepower
Empire	190,273	433	435	74,074
Supply	493,106	2,576	3,574	153,282
Midstream Company	343,915	88	568	118,800
Midstream Segment	1,027,294	3,097	4,577	346,156

1 DOT Gas Annual Report Form PHMSA F 7100.2-1 (2020).
2 Throughput published in 10-K/10-Q and volumes transported for the Acquired Tioga County Assets (1/1/2020 – 7/31/2020).
3 DOT Gas Annual Report Form PHMSA F 7100.2-1 (2020).
4 All Pipeline ROW kilometers (both regulated and unregulated).


SENECA RESOURCES
SENECA RESOURCES

National Fuel

Upstream Segment

Significant Emissions Reductions under the EPA Natural Gas Star Program

	2019 (1,409,229 Mcf)	Cumulative (3,304,304 Mcf)
Metric tons (MT) CO_2 equivalent	676,430 $MTCO_2e$	1,586,066 $MTCO_2e$
CO_2 emissions from the energy used by many homes in one year	78,056 homes	183,022 homes
Carbon sequestered from this many acres of U.S. forests in one year	883,386 acres	2,071,329 acres
Value of methane saved (at $3 per Mcf)	$4,227,687	$9,912,913

Greenhouse Gas Emissions

Our Upstream Segment is committed to reducing methane emissions and limiting its environmental footprint. As part of these efforts, over the past several years, Seneca has committed to the following voluntary emission reduction programs: EPA Natural Gas STAR (2015), EPA Methane Challenge (2018), and The Environmental Partnership (2018). Since joining EPA voluntary methane reduction programs, Seneca has documented cumulative methane reduction strategies totaling over 3,300,000 Mcf (approximately 1,586,000 metric tons of CO_2e) under the Natural Gas STAR program[1].

In connection with its participation in the Natural Gas STAR and Methane Challenge programs, Seneca makes publicly available program data on its emission reduction activities through the EPA's website.

Seneca's emissions reduction activities under the Natural Gas STAR Program include the following:

- installing flash tank separators on glycol dehydrators;
- eliminating unnecessary equipment and/or systems;
- improving system design;
- identification and replacement of pneumatic devices with zero-bleed devices;

1 https://www.epa.gov/sites/production/files/2021-01/documents/seneca-natural-gas-star-report-ry2019.pdf

- replacement of orifice meters with ultra-sonic meters;
- replacements of natural gas pneumatic pumps with electric pumps;
- directed inspection and maintenance, such as LDAR surveys;
- testing and repair of pressure safety valves;
- implementation of artificial lift; and
- utilization of EPA-approved reporting on well pad equipment design to bulk/test versus single well separators.

With respect to Seneca's participation in the EPA Methane Challenge Program, it has committed to various EPA-approved best management practices, including pneumatic controllers; fixed roof, atmospheric hydrocarbon tanks; and rod packing vents for reciprocating compressors.

In addition, Seneca has control measures in place for a myriad of combustion and non-combustion equipment to abate and/or to mitigate methane emissions. These control measures include:

- state-of-the-art catalytic converters for engines;
- ultra-low-emissions burners for heater treaters and steam generators;
- high-efficiency process flares;
- installation of vent gas recovery systems;
- installation of compressed air systems;
- utilization of no/low bleed pneumatics controls/actuators;
- use of capture and recovery systems for glycol dehydrators and tanks; and
- use of bi-fuel drilling rigs, frac and fleet vehicles.

Additionally, Seneca's West Division, located in California, participates in California's cap and trade program. This program, launched in 2013, is one of a suite of major policies the state is using to lower its greenhouse gas emissions. California expects its emissions trading system to reduce greenhouse gas emissions an additional 40 percent below 1990 levels by 2030 with a goal of reducing greenhouse gas emissions by 80 percent from 1990 levels by 2050.

Greenhouse Gas and Methane Emissions

Seneca's upstream business operates in two uniquely different basins, namely the Appalachia and San Joaquin (California) basins. In the Appalachia basin, production is from unconventional dry gas wells. The Appalachian basin boasts some of the lowest GHG and methane intensities across all basins in the United States. In California, Seneca primarily uses steam assist recovery to produce heavy crude oil. The production processes vary with respect to each of these energy sources, which affect their characteristic GHG and methane volumes and intensities, as shown on the following page.

"Our team develops, implements and communicates innovative environmental strategies and initiatives that advance Seneca's ongoing commitment to produce oil and natural gas in a sustainable manner."

Katherine Bandych
Senior Manager of Sustainability & Environment at Seneca Resources

The main contributor to GHG emissions in our California operations results from the combustion of natural gas for steam generators which are used to heat the heavy oils, allowing recovery. In 2020, this contributed over 90 percent of the overall CO_2e reported in our California operations, and accounts for the large difference in GHG intensity factors between our California and Appalachia production operations.

A large contributor to our methane intensity in the Appalachia production operations results from our use of field gas for the operation of pneumatic controllers. In 2020, this contributed over 72 percent of the total methane emissions reported in Appalachia. However, through Seneca's adoption of the use of bulk and test separation on multi-well pads, we have been lowering the use of these devices on a per well basis. We have also started to implement the use of electronic controllers and instrument air systems, which eliminate this source of methane emissions. Fortunately, technology is presenting various solutions for the elimination of these field gas operated controllers for both existing and new wells. We plan to make meaningful reductions in this source category as a result.

Additionally, the mitigation technologies mentioned earlier in this section are aimed at reducing Seneca's overall CO_2, CH_4, and N_2O emissions. As a barometer of the successful implementation of these mitigation technologies, Seneca compares its intensity numbers, particularly as they pertain to methane, versus other exploration and production segment peers.

Seneca's 2019 NGSI Appalachia Production Sector methane intensity of 0.080%, which includes additional non-EPA sources, was lower than the One Future reported 2019 weighted average Production Sector intensity rate of 0.085%.

Scope 1 Greenhouse Gas Emissions (Metric Tons CO_2e)

		2019[1]	2020[2]
Appalachia	EPA Subpart W Mandatory Reporting[3]	233,870	229,950
	Other Sources[4]	41,592	26,439
	Total Appalachia	275,462	256,389
California	EPA Subpart W Mandatory Reporting	312,638	318,834
	Other Sources	11,946	10,661
	Total California	324,584	329,495
Seneca (All)	EPA Subpart W Mandatory Reporting	546,508	548,784
	Other Sources	53,538	37,100
	Fleet[5]	1,332	1,565
	Offices	41	42
	Total Seneca	601,419	587,491

Scope 1 Methane Emissions (Metrics Tons CH_4 as CO_2e)

		2019[6]	2020[7]
Appalachia	EPA Subpart W Mandatory Reporting[8]	156,350	159,109
	Other Sources[9]	1,376	406
	Total Appalachia	157,726	159,515
California	EPA Subpart W Mandatory Reporting	3,745	3,865
	Other Sources	479	573
	Total California	4,224	4,438
Seneca (All)	EPA Subpart W Mandatory Reporting	160,095	162,974
	Other Sources	1,855	979
	Fleet	3	2
	Offices	0	0
	Total Seneca	161,953	163,955

1 2019 emissions were revised from the 2019 Corporate Responsibility Report to: 1) Calculate CO_2e values in accordance with the published 100-year time horizon global warming potential (GWP) values from the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (AR5, 2014) as preferred by SASB, 2) to include the SWEPI acquisition as reported to EPA, 3) to modify certain calculations involving pneumatic devices based on changes in device classifications from intermittent to low/continuous, and 4) to reflect updated pneumatic device counts resulting from a field level inventory across all upstream assets.
2 2020 emissions utilized a global warming potential of AR5 and include the acquisition of SWEPI.
3 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.
4 Other Sources include sources identified in the Natural Gas Sustainability Initiative (NGSI) and small sources that do not meet EPA Subpart W Reporting requirements.
5 Fleet and Offices emissions data for SWEPI assets prior to the acquisition was not available and is not included in the table.
6 2019 emissions were revised from the 2019 Corporate Responsibility Report to: 1) restate at a global warming potential of AR5, 2) to include the SWEPI acquisition as reported to EPA, 3) to modify certain calculations involving pneumatic devices based on changes in device classifications from intermittent to low/continuous, and 4) to reflect updated pneumatic inventory.
7 2020 emissions utilized a global warming potential of AR5 and include the acquisition of SWEPI, which refers to the Appalachian production assets acquired from Shell in 2020.
8 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.
9 Other sources include sources identified in the Natural Gas Sustainability Initiative (NGSI) and small sources that do not meet EPA Subpart W Reporting requirements.

Scope 1 Emissions Intensity (kg CO_2e/BOE)[1]

		2019	2020
Appalachia	Greenhouse Gas Emissions Intensity	4.37	4.31
	Methane Emissions Intensity	2.49	2.67
California	Greenhouse Gas Emissions Intensity	106.34	109.64
	Methane Emissions Intensity	1.38	1.47
Seneca (All)	Greenhouse Gas Emissions Intensity	9.07	9.36
	Methane Emissions Intensity	2.44	2.61

Scope 2 Greenhouse Gas Emissions (Metric Tons CO_2e)[2]

	2019	2020
Appalachia	401	430
California	10,954	11,477
Seneca (All)	11,355	11,907

Flared Hydrocarbons, Other Combustion, Process Emissions, Other Vented Emissions, and Fugitive Emissions (Metric Tons CO_2e)

	2019[3]	2020
Flared Hydrocarbons[4]	16,288	15,648
Other Combustion (Combustion Equipment, Compressors, Fleet, Offices)	424,762	409,647
Process Emissions (Dehydration)	4,951	4,525
Other Vented Emissions (NG Pneumatics, Well Venting for Liquid Unloading, Storage Tanks, Well Testing, Venting from Completions and Workovers, NGSI Sources)	150,843	151,516
Fugitive Emissions	4,575	6,155
Total	601,419	587,491

Criteria Pollutant Emissions (Metric Tons)

	2019[5]	2020
CO	130.11	122.28
NO_X	360.61	355.88
PM_{10}	19.34	17.21
SOX	1.78	1.76
VOCs	43.69	44.39

Air Quality

Criteria Pollutants (Metric Tons) - NOx, SOx, Volatile Organic Compounds (VOCs), and Particulate Matter (PM_{10})[6][7]

Our Upstream Segment, where practical, looks for mechanisms to reduce criteria emissions. In 2020, Seneca saw a decrease in most criteria pollutants, which was attributable to its transition from diesel engines to bi-fuel or natural gas engines, where feasible. This included a transition of its completion operations to a dual fuel fleet in Appalachia, as well as the transition of temporary diesel generator use to natural gas generators. In addition, for stationary engines, Seneca maintains emission source testing and screening programs to ensure engines are meeting permit and regulatory thresholds for emissions.

Water Management

For a detailed discussion of Seneca's best-in class water management practices, see *Biodiversity Impacts* of this Report.

In connection with Seneca's operations, we attempt to minimize our use of freshwater. In Appalachia, all of our freshwater is sourced from locations without high water risk due to the abundance of groundwater. Freshwater impoundments are used to manage the storage of freshwater and in 2020, they provided freshwater for consumption when withdrawals were limited due to drought restrictions. In California, our freshwater usage is essential for the processes that allow us to recycle approximately 51% of our produced water volumes, allowing us to mitigate our overall withdrawals.

1 GHG Intensity represents total CO_2e/Gross Production as reported to EPA. Methane Intensity represents methane as CO_2e/Gross Production.
2 Scope 2 represents emissions associated with purchased electricity. The purchased electricity data for SWEPI assets prior to the acquisition was not available and is not included in the table.
3 2019 Restated to include SWEPI acquisition.
4 In 2019, 76% of flared emissions came from California and in 2020 94% of flared emissions came from California.
5 2019 restated to include SWEPI as reported in the Pennsylvania Unconventional Natural Gas Emission Inventory.
6 With respect to Appalachia, data is per PA DEP Air Emissions Report under 25 Pa. Code § 135.3. With respect to California, data is per San Joaquin Valley Unified Air Pollution Control District. Emission Inventory Report. California criteria emissions include permitted combustion sources including engines, steam generators, heater treaters, and flares. Appalachia criteria emissions including stationary engines, flares, tanks, dehydrators, reboilers/heaters, pneumatics, venting and blowdowns, fugitives, completions, and drill rigs.
7 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.

Due to the high demand for agriculture water, withdrawals have exceeded recharges in the San Joaquin Valley, therefore, all freshwater withdrawn in California in 2019 and 2020 was sourced from areas that are considered high water risk.

Freshwater Withdrawn and Freshwater Consumed (Thousands of Cubic Meters)[1,2]

		2019	2020
Appalachia	Total Water Withdrawn	811	428
	% of Water from Locations with High or Extremely High Water Risk	0%	0%
	Total Freshwater Consumed	793	771
	% of Water Consumed from Locations with High or Extremely High Water Risk	0%	0%
California	Total Water Withdrawn	114	115
	% of Water from Locations with High or Extremely High Water Risk	100%	100%
	Total Freshwater Consumed	114	115
	% of Water Consumed from Locations with High or Extremely High Water Risk	100%	100%
Seneca (All)	Total Water Withdrawn	925	543
	% of Water Withdrawn from Locations with High or Extremely High Water Risk	12%	21%
	Total Freshwater Consumed	907	886
	% of Water Consumed from Locations with High or Extremely High Water Risk	13%	13%

Volume of Produced Water and Flowback Generated (Thousands Cubic Meters)[3]

		2019[4]	2020
Appalachia	Produced Water and Flowback	922	971
	% Discharged	0.0%	0.0%
	% Injected	5.5%	3.5%
	% Recycled	94.5%	96.5%
California	Produced Water and Flowback	3,844	4,269
	% Discharged	0.0%	0.0%
	% Injected	39.7%	48.7%
	% Recycled	60.3%	51.3%
Seneca (All)	Produced Water and Flowback	4,766	5,240
	% Discharged	0.0%	0.0%
	% Injected	31.4%	38.2%
	% Recycled	68.6%	61.8%

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 specifying the contents of hydraulic fracturing fluids used at each location.

1 With respect to Seneca's California operations, freshwater is acquired through local water utility company providers, and to a lesser extent from agricultural water sources. Freshwater withdrawn and consumed is reported to the California Geologic Energy Management Division (CalGEM). Produced water is reported to the California Air Resources Board (CARB), and CalGEM. Recycled and disposed water volumes are measured and recorded daily as per standard field operating procedures, and disposed volumes are reported to CalGEM.
2 With respect to our Appalachian operations, freshwater withdrawn and consumed is tracked per PA DEP bi-annual and annual reports, and volumes are reported to the PA DEP and Susquehanna River Basin Commission. Recycled water and disposed water volumes are measured and recorded daily as per standard field operating procedures, and disposed volumes are reported to PA DEP.
3 No Hydrocarbon content in discharges water, as Seneca does not discharge produced fluid.
4 2019 was restated to be consistent with 2020 and only includes water produced from the well.

Pre- and Post-Drill Water Sampling[1]

In connection with each new drilling permit, Seneca prepares a list of property owners within 4,000 feet of the well and sends letters to said property owners notifying them of the proposed drilling activities and Seneca's intention to sample their water source(s). Thereafter, a water sampling company contacts water owners and collects necessary ground and surface water samples. Those samples are sent to a certified laboratory for testing; a summary report with analytical results is sent to the landowner and the results are also submitted to the PA DEP. In accordance with applicable regulations, Seneca conducts post-drill sampling as necessary.

In 2020, Seneca assumed responsibility for two water quality complaints related to the presence of methane in groundwater in Tioga County, PA through the SWEPI acquisition. There was no pre-drill analysis completed for these properties when the nearby unconventional wells were drilled in 2010-2011, therefore there is no baseline for comparison.

Biodiversity Impacts

Environmental Management Policies and Practices

Environmental Management System Overview

Environmental stewardship is a core Company value, which is clearly defined in Seneca's EHS Values and included in Seneca's EHS Policy. All Seneca executives, Division heads, and EHS Managers, review, approve and sign off on the EHS Policy on a regular basis.

The Seneca Environmental Management System ("EMS") is a comprehensive system that applies to all aspects and phases of our operations. This system is part of an Environmental, Health, and Safety system that is modeled after the ISO

1 Disclosure includes pre- and post-drill ground and surface water sampling associated with unconventional well operations.

standards.[1] Although Seneca does not formally participate in or apply for certification in ISO 14001 (Environmental Management), or ISO 45001 (Occupational Health & Safety Management), our EMS is 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. In 2020, we had zero incidents that would qualify as "process safety events," which are considered incidents of a serious nature or consequence.

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.). This information is presented so that any economic assessments may include these environmental considerations.

Once Seneca decides to develop an area, environmental considerations are a top priority. We have conducted and continue to conduct in-depth biological assessments to identify protected habitats. We also conduct wetland surveys to identify any wetlands and/or streams. We work closely with federal, state, county, and local agencies as well as non-profit environmental organizations to ensure that we have identified habitats and have taken steps to protect them.

For example, our California operations employees and contractors who work around development or disturbance areas are required to undergo annual training for environmental awareness. This training includes identification of endangered plants and animals in the area, how to avoid them, what steps to take if they are identified, and applicable regulations. This training also focuses on protection of cultural and paleontological resources including Native American artifacts, ensuring that our employees and contractors that encounter a sensitive area are trained on how to handle the situation.

Air Quality Practices

Seneca has a robust air quality control, management, and improvement program, which in various facets goes above and beyond regulatory requirements. In addition, Seneca has 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

1 Seneca is in compliance with the majority of the provisions of the International Finance Corporation Performance Standards, particularly IFC Performance Standard No. 1 (IFC PS1). While many of the provisions are designed to address global and diverse operations, Seneca's environmental management system focuses on those items applicable to our activities and operating areas. For example, Seneca has strong emergency preparedness and response programs that include planning, training, and community involvement. As such, compliance with these IFC PS1 provisions (Nos. 20 and 21) could be classified as complete. However, as Seneca does not operate in areas with indigenous peoples, Seneca's environmental management system does not focus on that provision (No. 32). IFC Performance Standards Nos. 3, 4, and 6 pertain to resource efficiency/pollution prevention, community health, safety, and security, and biodiversity, respectively. As discussed throughout this report, Seneca Resources has robust systems for achieving each of those items. Seneca's compliance with the respective IFC PS is similar to IFC PS1.

- Description of the procedures and methods used for quality assurance, maintenance, and repair of all continuous monitoring system, flow meters and other instrumentation used to provide data for the GHGs reported.

Additionally, in connection with Seneca's full leak detection and repair program in both our Appalachian and California divisions, Seneca follows a Leak, Detection, and Repair ("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. In California, although we are required to conduct these inspections every 3 months, we inspect all 120,000-plus components every month to ensure that we identify and repair problems early.

As detailed in *Air Quality*, our Upstream Segment participates in several voluntary environmental management programs that are focused on improvement of emissions.

Water Management Practices

Seneca prides itself on being an industry leader in managing water assets. For calendar 2020, based on a survey of environmental performance conducted by the The American Exploration and Production Council ("AXPC") - a national trade association representing the largest independent oil and natural gas exploration and production companies in the United States - Seneca Resources ranked 2nd best out of 22 companies for our recycled water rate.

Protecting Fresh Water Aquifers

As detailed in *Water Management*, 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 Resources' horizontal drilling practices use only water-based drilling fluid or air when drilling through fresh water zones. During other stages of drilling, a synthetic oil-based mud system is used once fresh water zones are protected by casing and cement.

"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

In 2014, our Upstream Segment formed its own water logistics company, Highland Field Services, LLC ("Highland"), to manage the sourcing, handling and recycling of fluids generated by and used in its Appalachian operations. Since then, Highland has invested over $65 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:

"Our team at Highland Field Services focuses on managing our water needs in an environmentally sustainable manner."

Marisa Dollinger
Highland Field Services Environmental Engineer

- **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 fiscal 2020, Highland recycled 96% of Seneca's produced fluids, or 6.7 million barrels, plus an additional 440,000 barrels of fluids that were generated by and received from third-party operators.

- **Minimizing Freshwater Used in New Well Completions:** Seneca's ability to reuse recycled fluids in new well completions has significantly reduced the amount of freshwater consumed by our operations. In 2020, Seneca's Marcellus and Utica shale well completions used 66% recycled fluids and only 34% freshwater. The freshwater consumed in our completions was sourced from Seneca-owned groundwater wells and permitted stream withdrawal locations.

- **Reduce Environmental Footprint:** Highland manages the movement of approximately 1.1 million barrels of fluid every month, more than 85% of which is pumped through Highland's pipeline distribution system to deliver fluids from storage facilities directly to Seneca's Marcellus and Utica development pads. As a result, Seneca was able to avoid an estimated 100,000 truck trips in fiscal 2020, eliminating the associated air emissions and reducing the impact on local roads and public infrastructure.

- **Develop 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 under an underground injection control (UIC) program designed to manage Seneca's disposal needs in an environmentally sound manner, and currently have operating UIC wells in Pennsylvania and Ohio.

- **Promote Transparency and Regulatory Compliance:** All fluid handled by Highland, including type, volume, origin and destination, is tracked for regulatory and internal reporting purposes. In Pennsylvania, 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.

- **Lower 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.

Natural Resources Consumption

Seneca recognizes the need to use resources prudently and to find opportunities to reduce and improve our use of natural resources. In this regard, 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. Seneca estimates that during these operations it can run on field gas about 60% of the time, which drives significant reductions in emissions. In our California operations, we make extensive use of pump-off controllers and variable speed drives. Both of these technologies allow us to reduce energy usage and extend the life of our equipment.

In addition, Seneca has made significant efforts to incorporate solar power facilities into its operations, where practicable. In 2016, Seneca brought online a solar plant at its North Midway Sunset field in Kern County, California. This plant uses over 10,000 individual solar panels to generate more than 2.5 megawatts of power, which is used to power Seneca's wells and facilities in that area. The amount of power generated replaces approximately 20% of our overall electricity usage in that field. Seneca has also installed solar throughout the parking facility at its division office in Bakersfield, California. This system generates almost 80 kilowatts of power, which satisfies most of the power needs for that office. In 2020, Seneca began construction of an additional solar facility at its South Midway Sunset field, which is expected to be completed in calendar 2021. Seneca is actively evaluating other solar projects within our California footprint.

Chemical Usage

Seneca's hydraulic fracturing fluids are in full compliance with both EPA and state regulations. As discussed in *Water Management*, Seneca voluntarily participates in www.fracfocus.org, an independent website that provides information to help stakeholders understand the additives in the water used for each of Seneca's shale development operations in Appalachia, as well as our oil operations in California. Seneca also voluntarily provides this data to the PaDEP.

Ecological and Biodiversity Impacts

As there is the potential for habitats of various endangered species to be encountered within Seneca's operating areas, we have conducted biological surveys with respect to a large portion of our operations footprint to identify these specific habitats. Our development groups use these surveys in site selection – more specifically to avoid areas where there are known habitats or nests. In the event it is not possible to avoid disturbance, we work with professional biologists and botanists to develop mitigation measures, including natural barriers (e.g. a ridgeline or stand of trees), artificial barriers (e.g. biologic protective fencing) and other measures (e.g offset acreage).

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

Number and Volume of Hydrocarbon Spills – (Bbls)[1,2]

	2019	2020
Number of Spills Greater than 1 Bbl	4	0
Total Volume of Spills Reported Above	4.6	0
Total Volume of Spills Occurring in the Artic	Not Applicable	Not Applicable
Total Volume of Spills Impacting Environmentally Sensitive Shoreline	0	0

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

Appalachia

Seneca has submitted over 200 Pennsylvania Natural Diversity Inventory (PNDI) permits over the past 5 years. These PNDIs are a part of the Pennsylvania Natural Heritage Program (PNHP) partnership between various state regulatory agencies which reviews these submittals for potential impacts to threatened, endangered, special concern species and special concern resources in PA.

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 do show up on 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 actually present in the permit area. If these species are found, mitigating actions are taken, including route avoidance, special fencing, or other restrictions.

Approximately 2% of PNDI permits over the past 5 years were in areas of confirmed endangered species habitat; however, 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. Within Appalachia, currently 69.4 Bcfe of proved reserves are located on or adjacent to land which is designated as known endangered or threatened species habitat. This constitutes approximately 2.0% of Seneca's total reserves base as of the close of fiscal 2020.

California

With respect to Seneca's California operations, a third-party environmental engineering consulting firm helps Seneca evaluate the need for biological surveys for new well permits and material surface alterations. These consultants review submitted plans by first cross referencing the California Natural Diversity Database ("CNDDB") for identified habitat of Threatened and Endangered species.

If a requested permit involves proposed work in areas of habitat, additional surveys are performed by the firm. These include recon surveys, clearance surveys, and state prescribed protocol level surveys when necessary depending on the species and likelihood of habitat. If in the course of these surveys a species or habitat is found, Seneca works with applicable regulatory agencies to take mitigating action to minimize possible impacts to these threatened or endangered species.

Within California, for 2020, approximately 20.3 Bcfe of proved reserves are booked on acreage overlapping with possible habitat of threatened or endangered species. This accounts for 0.6% of Seneca's total reserves base as of the close of fiscal 2020.

1 Includes reported spills from produced hydrocarbons off containment. On occasion, Seneca may experience a spill of non-produced hydrocarbons, such as when an engine leaks motor oil onto the ground.
2 Seneca has not had any spills into areas where total recovery of hydrocarbons is not possible. Accordingly, we estimate that 100% of spilled hydrocarbons are recovered and disposed of in accordance with applicable regulations. The State of California Office of Spill Prevention and Response has a defined method of calculation of recovery, but we have not had any incidents that have required testing of contaminated soil/vegetation following this method.

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

Total Reserves (Bcfe) at fiscal year-end 2020	3,458
Reserves Within Sites with Protected Conservation Status[1]	19.7
% of Reserves	0.57%
Reserves Within Areas In Which Endangered Species Habitat Identified [2]	89.7
% of Reserves	2.59%

Environmental Impacts of Project Development

Seneca maintains a constant focus on compliance with all applicable environmental laws, regulations, and other requirements, which includes monitoring by an internal Compliance Department that is focused on ensuring such compliance, as well as participation in industry groups such as the American Exploration and Production Council ("AXPC"), Marcellus Shale Coalition ("MSC"), and California Independent Producers Association ("CIPA").

In California, our Upstream Segment operations are subject to applicable regulation and oversight from the local County, County Environmental Health Department, Air Pollution Control District, Regional Water Quality Control Board, CalGEM (California Geologic Energy Management Department), Cal EPA, CARB, CA Fish and Wildlife Department, PHMSA, EPA, U.S. Bureau of Land Management, and other agencies.

In Pennsylvania, our Upstream Segment operations are subject to applicable regulation and oversight from the PADEP, Susquehanna River Basin Commission, PA Fish and Game Commission, PA Department of Natural Resources, PA Department of Labor and Industry, and the EPA.

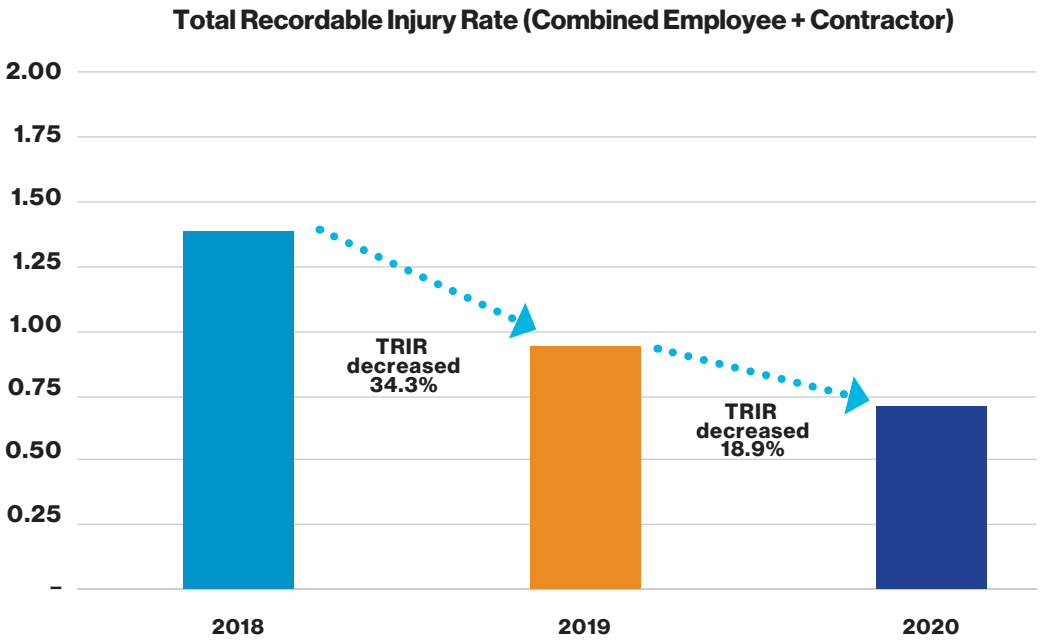
In 2020, Seneca was inspected a total of 1,603 times by the following agencies: PADEP, San Joaquin Valley Unified Air Pollution Control District, and the Kern County Department of Environmental Health. In Pennsylvania, Seneca had the 4th lowest violation rate out of its 13 peers in the Appalachian Basin at 1.38%[3].

Workforce Health & Safety

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

Seneca provides employees and contractors with training on near misses and regular communications to emphasize the importance of near miss reporting. In addition, safety communications highlighting significant near misses and lessons learned are shared.

1 Includes sites located per comprehensive review of local, state, and nationally designated protected/conservation areas.
2 Seneca is required to complete biological surveys in both Pennsylvania and California for threatened and endangered species prior to initiating operations. Given the level of state engagement in protecting habitat in our operating areas, the IUCN Redlist database was not utilized in formulating this response. Instead, Seneca leveraged state-specific habitat permitting processes to identify areas of operations where threatened and endangered species habitat has been identified and confirmed by third party biological surveys. The reserves located within these habitat areas has been totaled and shown as a percent of the total reserves base
3 Per the PA DEP Oil & Gas Compliance Report for the period 1/1/2020 – 12/31/2020. Peers include ARD Operating LLC, Repsol Oil & Gas USA LLC, SWN Production Co LLC, PennEnergy Resources LLC, JKLM Energy LLC, Cabot Oil & Gas Corp, Chief Oil & Gas LLC, XTO Energy Inc., Exco Resources PA LLC, Chesapeake Appalachia LLC, Range Resources Appalachia LLC, EQT Production Co., and CNX Gas Co LLC..



TRIR

	2018	2019	2020
Full-Time Employees	0.00	0.41	0.76
Contract Employees	1.65	0.99	0.73
Short-Service Employees[1]	—	—	—

Fatality Rate

	2018	2019	2020
Full-Time Employees	0.00	0.00	0.00
Contract Employees	0.00	0.00	0.21[2]
Short-Service Employees[3]	—	—	—

NMFR[4]

	2018	2019	2020
Full-Time and Contract Employees	7.78	8.86	16.00

Average Hours of Health, Safety, and Emergency Response Training

In 2020, on average, Seneca employees received 14.27 hours of health, safety, and emergency training. In addition, Seneca provides significant training to its contractors (over 5,000 total hours in 2020), including an annual contractor safety meeting, annual EHS site orientation, and contractor safety stand downs.

Safety Management Systems

As described in detail in *Integrity of Gas Delivery Infrastructure*, safety is a guiding principle and our highest priority at National Fuel. Additionally, Seneca has an Environmental Health, and Safety Mission, Vision, and Principles, which provides a further foundation for its safety program.

The overall objective of Seneca's oil and gas operations is to maximize the value of its mineral and human assets. 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.

1 Seneca does not categorize individuals as Short-Service Employees for metrics.
2 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.
3 Seneca does not categorize individuals as Short-Service Employees for metrics.
4 Seneca tracks near misses reported by contractors and employees as a single metric.

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 town hall meetings which are attended by all employees; and
• Management participation in the Management Audit Program which is comprised of teams of various disciplines that perform quarterly safety inspections.
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's safety metrics and written safety programs are reviewed against established criteria. Once onboarded, metrics continued 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, AXPC, and CIPA.

Security, Human Rights & Rights of Indigenous Peoples

Reserves Located In or Near Areas of Active Conflict

Not applicable to Seneca, as 100% of our reserves for fiscal year 2020 are located in the United States.

Reserves Located In or Near Indigenous Land

None of Seneca's fiscal year 2020 reserves are located on or near (within 5 kilometers of) indigenous land as recognized by the US Bureau of Indian Affairs.

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

Seneca does not currently explore for or develop any oil and gas reserves located within indigenous lands or an area 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 and California are codified by the respective governing and regulatory bodies that oversee such operations. In Pennsylvania, for example, Act 13 became law when Governor Corbett signed House Bill 1950 on Feb. 14, 2012. The Act outlines and defines the rights and interests of communities in areas where natural gas development occurs.

In addition, Seneca utilizes recommended practice guidelines from the various trade associations such as CIPA, MSC, and AXPC where we operate.

Seneca donated trucks to community organizations in need during the COVID-19 pandemic.

Seneca maintains a corporate giving program that is designed to leverage community capital - both in-kind and financial - to simultaneously address issues that affect the community at-large, our current and future constituents, and our business objectives. Many of Seneca's employees and vendors live in and around where our operations take place, and Seneca strives to financially support these communities. Seneca collaborates with the local communities in their preparations to respond effectively to emergency situations and ensures compliance with statutes and regulations concerning our operations. These community grants support this effort, and generally fall into four core areas: Health and Human Services / Health recreation; Emergency Response and Disaster Relief; Community, Employee, Pedestrian and Child Safety; and, Education. In 2020, Seneca made monetary grants of more than $200,000 to local communities, many of which were intended to assist in COVID19 relief, including donations to frontline workers and food banks, and provided health supplies to local hospitals and long-term care facilities.

The Company uses a variety of tools to educate and update elected officials at all levels of government, including videos, brochures, in person meetings, site visits and operational tours. Seneca also engaged the communities in which it operates to educate and inform our communities about our operations. The COVID19 pandemic created unique challenges in this regard because many in-person events, such as rig tours, had to be canceled. To address this challenge, Seneca worked with Penn State University to expand its virtual reality tour project, utilizing this program as a method to conduct virtual rig tours for elected officials and academics in 2020.

In 2020, Seneca also expanded its college outreach program to include institutions that are located outside of the Seneca footprint to provide both in-person and virtual learning opportunities. These efforts included an equipment donation to the University of Pittsburgh Bradford's petroleum engineering program, and the creation of a new scholarship in conjunction with the Keystone Elk Country Alliance (KECA) that is awarded to an individual who chooses a vocation that could support environmental or operational improvements.

Seneca is also a founding industry partner and a board member of the TOPCORP regulatory training program. TOPCORP is a comprehensive, practical training program based in scientific principles for state and federal regulators, field inspectors and policy makers to better understand the technologies employed in conventional and shale oil and gas field operations.

Impacts from Non-Technical Delays

Seneca builds additional lead time into its projects to account for anticipated delays. For example, changing legislation and regulation at the state level has created the need to build in additional time for permitting. As described more fully in the Company's Risk Management disclosure in Section 2.2.3, the Company identifies legislative and regulatory risks that could impact the Company's strategic planning and capital spending processes.

Reserves Valuation & Capital Expenditures

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

Seneca reviewed sensitivities to its reported fiscal 2020 year-end reserves utilizing crude oil and U.S. natural gas pricing for three different scenarios outlined in the 2020 World Energy Outlook ("WEO") Report – the Stated Policies, Sustainable Development, and Current Policies scenarios. The WEO Stated Policies Scenario assumes COVID-19 is gradually brought under control in 2021 and the global economy returns to pre-crisis levels the same year. It reflects all of the announced policy intentions and targets, insofar as they are backed up by detailed measures for their realization. The WEO Sustainable Development Scenario assumes a surge in clean energy policies and investment puts the energy system on track to achieve sustainable energy objectives in full, including the Paris Agreement, energy access and air quality goals. The WEO Delayed Recovery Scenario attempts to quantify the possible impact of the COVID-19 pandemic if the assumptions in the other scenarios are too optimistic and the global economy does not return to its pre-crisis size until 2023.

For purposes of Seneca's review, Seneca reviewed the impact of the oil and natural gas prices included in the WEO Report commodity pricing table on its fiscal 2020 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 2020 reserves for the three WEO Report policy scenarios. As shown in the table on the following page, with respect to both Appalachia and California production, and Seneca overall, the pricing shown in each of the WEO Report Scenarios would not be expected to have a negative impact on Seneca's reported fiscal 2020 reserves, as the pricing in the WEO Report scenarios is above the prices used in Seneca's SEC 2020 reserves report.

2020 WEO Report Commodity Prices

			Stated Policies				Sustainable Development		Delayed Recovery	
Real Terms ($2019)	**2010**	**2019**	**2025**	**2030**	**2035**	**2040**	**2025**	**2040**	**2025**	**2040**
IEA Crude Oil ($/barrel)	91	63	71	76	81	85	57	53	59	72
Natural Gas ($/MBtu)										
United States	5.1	2.6	3.5	3.5	3.8	4.2	2.1	2.0	3.2	3.7
European Union	8.7	6.7	6.7	7.5	7.9	8.3	4.8	4.9	6.3	7.6
China	7.8	8.2	8.4	8.3	8.5	8.8	6.0	6.4	7.9	8.2
Japan	12.9	10.1	9.2	8.9	8.9	9.0	5.4	5.7	8.4	8.5

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

	Net Reserves BCFE	
Appalachia	SEC Reserves Report	3,296
	Stated Policies	3,375
	Sustainable Development	3,320
	Delayed Recovery	3,374
California	SEC Reserves Report	162
	Stated Policies	178
	Sustainable Development	168
	Delayed Recovery	175
Seneca (All)	SEC Reserves Report	3,458
	Stated Policies	3,553
	Sustainable Development	3,488
	Delayed Recovery	3,549

Investments in Renewable Energy and Related Revenues

Over the past several years, Seneca has placed two solar projects in service. In 2016, Seneca's West Division placed in service a solar plant to facilitate its North Midway Sunset Operating Field, the cost of which was approximately $6.6 million. In 2018, Seneca's West Division placed into service a solar project to facilitate its utility needs at its Bakersfield, California office, the total cost of which was approximately $0.3 million. Additionally, in 2020, Seneca began construction of an additional solar facility at its South Midway Sunset field, which is expected to be completed in calendar 2021. Approximately $2.0 million was spent in 2020 on this project.

All renewable energy generated by Seneca's California assets are used to offset electricity needs in our operating fields and facilities, thus there was not any revenue generated from renewable energy in 2020.

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

As indicated in the Company's TCFD disclosure in Section 2.2.2, the Company monitors developments surrounding climate change, including physical and transitional risks, as well as corresponding opportunities. The Board and management consider these risks and opportunities in their strategic and capital spending decision process, which includes acquisitions, such as the Company's approximately $504 million acquisition of Appalachian upstream and midstream assets from a subsidiary of Royal Dutch Shell in fiscal 2020. 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.

Business Ethics and Transparency

Reserves in Countries that have the 20 Lowest Rankings in Transparency International's Corruption Perception Index

Not applicable to Seneca, as 100% of our reserves for 2020 are located in the United States.

Management System for Prevention of Corruption and Bribery throughout the Value Chain

See *Leadership and Government – Business Ethics* concerning the Company's management of business ethics, including with respect to its business partners.

Management of the Legal and Regulatory Environment

See *Management of the Environmental Legal & Regulatory Environment* concerning the Company's management of the legal and regulatory environment.

Critical Incident Management

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

In 2020, Seneca did not have any events that are classified as Tier 1 process safety events ("PSE"). To determine classification of PSEs, 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 Enterprise Risk Management framework. .

In addition to the corporate Enterprise Risk Management process, Seneca Resources has the following processes in place to identify and mitigate risk:

Risk Identification Processes

- Hazard Operability Studies (HAZOPs) and Hazard Identification Studies (HAZIDs) are performed to identify and rank risks and safeguards;
- Job Safety Assessments (JSAs) or Job Hazard Assessments (JHAs) are performed before tasks are started so that specific hazards can be identified and mitigative measures identified;
- Simultaneous Operations (SimOps) 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 (PSSRs) are completed before turning on a new well pad or facility;
- A Management of Change (MOC) 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; and
- Leak detection and repair inspections using a FLIR infrared camera are performed quarterly to identify leaks;
- 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;
- Verbal and tabletop emergency response drills and 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;
- Risks identified during the SimOps planning and review process are addressed through the use of 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, CIPA) 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

	2019	2020
Net Gas Production (MMcf/day)	566.70	679.62
Net Oil Production (Mbbl/day)	6.44	6.31
Number of Offshore Sites	0	0
Number of Terrestrial Sites	2,475	2,765

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 the sustainability template to our specific needs. 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 the reporting and testing standards applicable to the additional measures we expect to include in future reports; (2) the Company's ability to estimate accurately the time and resources necessary to meet emissions targets, (3) disallowance by applicable regulatory bodies of appropriate rate recovery for system modernization, (4) governmental/regulatory actions and/or market pressures to reduce or eliminate reliance on natural gas, and (5) 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.

National Fuel

Appendix

Appendix A: Index of Sustainability Reporting Topics, by Segment

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	

Climate-Related Financial Disclosures (TCFD)

TCFD Pillar	Metric	Report Section
Governance	Describe the board's oversight of climate-related risks and opportunities.	• Governance of Corporate Responsibility and Sustainability
	Describe management's role in assessing and managing climate-related risks and opportunities.	• 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.	• 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.	• 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.	• Resiliency
Risk Management	Describe the organization's processes for identifying and assessing climate-related risks.	• Risk Management
	Describe the organization's processes for managing climate-related risks.	• Risk Management
	Describe how processes for identifying, assessing and managing climate-related risks are integrated into the organization's overall risk management.	• 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.	• Metrics and Targets
	Disclose Scope 1, Scope 2 and, if appropriate, Scope 3 greenhouse gas emissions and the related risks.	• 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.	• Metrics and Targets • Downstream Greenhouse Gas Emissions • Midstream Greenhouse Gas Emissions • Upstream Greenhouse Gas Emissions

Downstream Segment Appendix

Topic	SASB(a)	GRI (Core)(b)
Greenhouse Gas Emissions		
Ecological Impacts		
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 Metric	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	
Community Relations	EM-EP-210b.1, EM-EP-210b.2	
Work Force and Health Safety	EM-EP-320a.1, EM-EP-320a.2	103-2
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

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