



National Fuel[®]

An Integrated Company Approach – Voluntary GHG Reductions

2019 Natural Gas Star &
Methane Challenge Workshop

November 6, 2019
Presented by Ronald Kraemer

Safe Harbor For Forward Looking Statements



National Fuel

This presentation may contain “forward-looking statements” as defined by the Private Securities Litigation Reform Act of 1995, including statements regarding future prospects, plans, objectives, goals, projections, estimates of oil and gas quantities, strategies, future events or performance and underlying assumptions, capital structure, anticipated capital expenditures, completion of construction projects, projections for pension and other post-retirement benefit obligations, impacts of the adoption of new accounting rules, and possible outcomes of litigation or regulatory proceedings, 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. Forward-looking statements involve risks and uncertainties which could cause actual results or outcomes to differ materially from those expressed in the forward-looking statements. The Company’s expectations, beliefs and projections are expressed in good faith and are believed by the Company to have a reasonable basis, but there can be no assurance that management’s expectations, beliefs or projections will result or be achieved or accomplished.

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: changes in laws, regulations or judicial interpretations to which the Company is subject, including those involving derivatives, taxes, safety, employment, climate change, other environmental matters, real property, and exploration and production activities such as hydraulic fracturing; delays or changes in costs or plans with respect to Company projects or related projects of other companies, including difficulties or delays in obtaining necessary governmental approvals, permits or orders or in obtaining the cooperation of interconnecting facility operators; governmental/regulatory actions, initiatives and proceedings, including those involving rate cases (which address, among other things, target rates of return, rate design and retained natural gas), environmental/safety requirements, affiliate relationships, industry structure, and franchise renewal; financial and economic conditions, including the availability of credit, and occurrences affecting the Company’s ability to obtain financing on acceptable terms for working capital, capital expenditures and other investments, including any downgrades in the Company’s credit ratings and changes in interest rates and other capital market conditions; changes in the price of natural gas or oil; impairments under the SEC’s full cost ceiling test for natural gas and oil reserves; factors affecting the Company’s ability to successfully identify, drill for and produce economically viable natural gas and oil reserves, including among others geology, lease availability, title disputes, weather conditions, shortages, delays or unavailability of equipment and services required in drilling operations, insufficient gathering, processing and transportation capacity, the need to obtain governmental approvals and permits, and compliance with environmental laws and regulations; increasing health care costs and the resulting effect on health insurance premiums and on the obligation to provide other post-retirement benefits; changes in price differentials between similar quantities of natural gas or oil sold at different geographic locations, and the effect of such changes on commodity production, revenues and demand for pipeline transportation capacity to or from such locations; other changes in price differentials between similar quantities of natural gas or oil having different quality, heating value, hydrocarbon mix or delivery date; the cost and effects of legal and administrative claims against the Company or activist shareholder campaigns to effect changes at the Company; uncertainty of oil and gas reserve estimates; significant differences between the Company’s projected and actual production levels for natural gas or oil; changes in demographic patterns and weather conditions; changes in the availability, price or accounting treatment of derivative financial instruments; changes in laws, actuarial assumptions, the interest rate environment and the return on plan/trust assets related to the Company’s pension and other post-retirement benefits, which can affect future funding obligations and costs and plan liabilities; changes in economic conditions, including global, national or regional recessions, and their effect on the demand for, and customers’ ability to pay for, the Company’s products and services; the creditworthiness or performance of the Company’s key suppliers, customers and counterparties; the impact of information technology, cybersecurity or data security breaches; economic disruptions or uninsured losses resulting from major accidents, fires, severe weather, natural disasters, terrorist activities or acts of war; significant differences between the Company’s projected and actual capital expenditures and operating expenses; or increasing costs of insurance, changes in coverage and the ability to obtain insurance.

Forward-looking statements include estimates of oil and gas quantities. Proved oil and gas reserves are those quantities of oil and gas which, by analysis of geoscience and engineering data, can be estimated with reasonable certainty to be economically producible under existing economic conditions, operating methods and government regulations. Other estimates of oil and gas quantities, including estimates of probable reserves, possible reserves, and resource potential, are by their nature more speculative than estimates of proved reserves. Accordingly, estimates other than proved reserves are subject to substantially greater risk of being actually realized. Investors are urged to consider closely the disclosure in our Form 10-K available at www.nationalfuelgas.com. You can also obtain this form on the SEC’s website at www.sec.gov.

For a discussion of the risks set forth above and other factors that could cause actual results to differ materially from results referred to in the forward-looking statements, see “Risk Factors” in the Company’s Form 10-K for the fiscal year ended September 30, 2018 and the Forms 10-Q for the quarter ended December 31, 2018, March 31, 2019, and June 30, 2019. The Company disclaims any obligation to update any forward-looking statements to reflect events or circumstances after the date thereof or to reflect the occurrence of unanticipated events.

National Fuel Gas - Company Overview

Upstream



Exploration & Production



Midstream



Gathering



Pipeline & Storage



Downstream



Utility



Energy Marketing



NFG: A Diversified, Integrated Natural Gas Company

Upstream

Exploration & Production

Developing our large, high quality acreage position in Marcellus & Utica shales⁽¹⁾

44% of NFG EBITDA⁽²⁾

785,000

Net acres in Appalachia

~560 MMcf/day

Net Appalachian natural gas production

Midstream

Gathering Pipeline & Storage

Expanding and modernizing pipeline infrastructure to provide outlets for Appalachian natural gas production

34% of NFG EBITDA⁽²⁾

\$1.6 Billion

Investments since 2010

4.2 MMDth

Daily interstate pipeline capacity under contract

Downstream

Utility Energy Marketing

Providing safe, reliable and affordable service to customers in WNY and NW Pa.

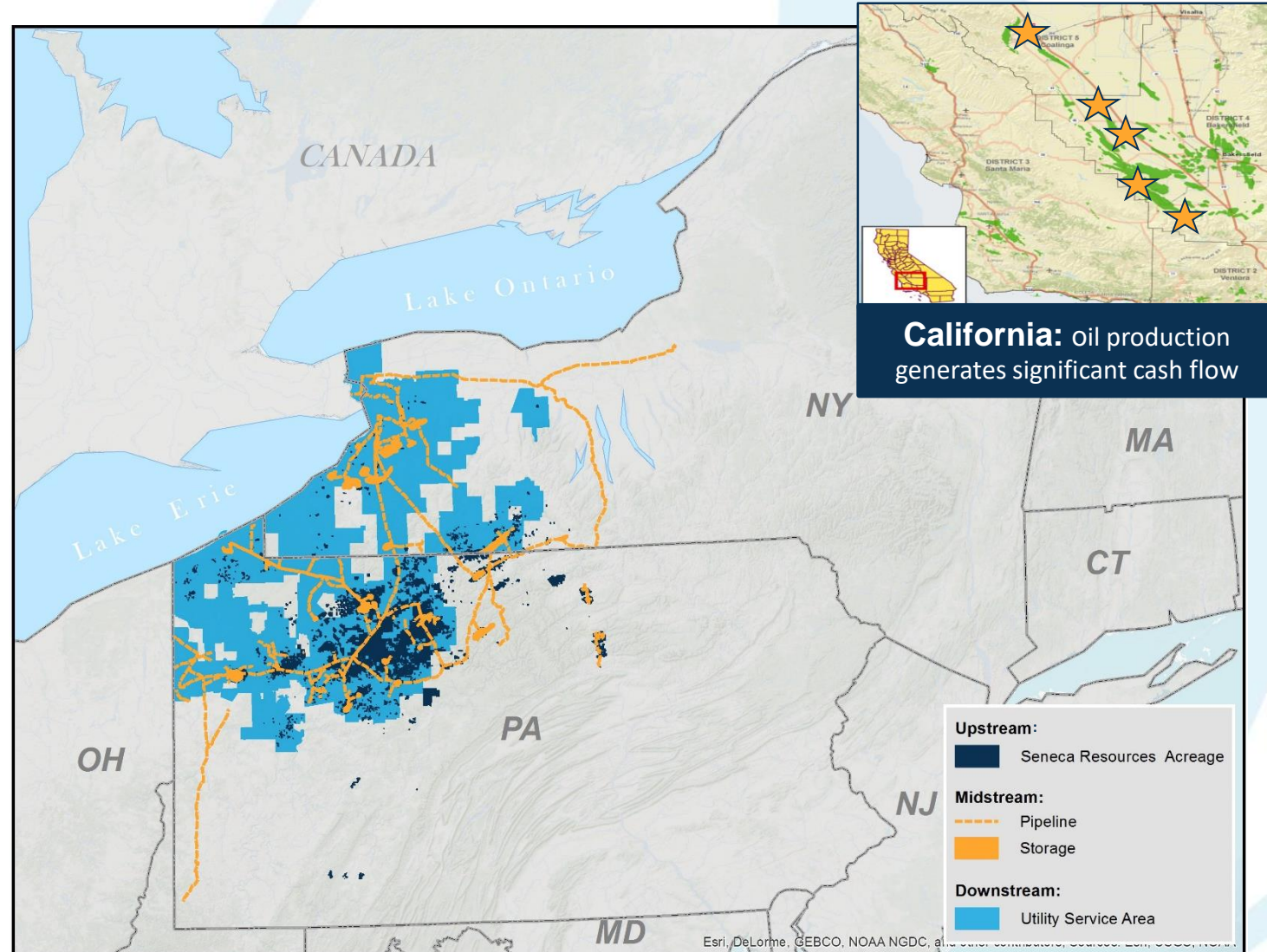
22% of NFG EBITDA⁽²⁾

750,000

Utility customers

\$300 Million

Investments in safety since 2014

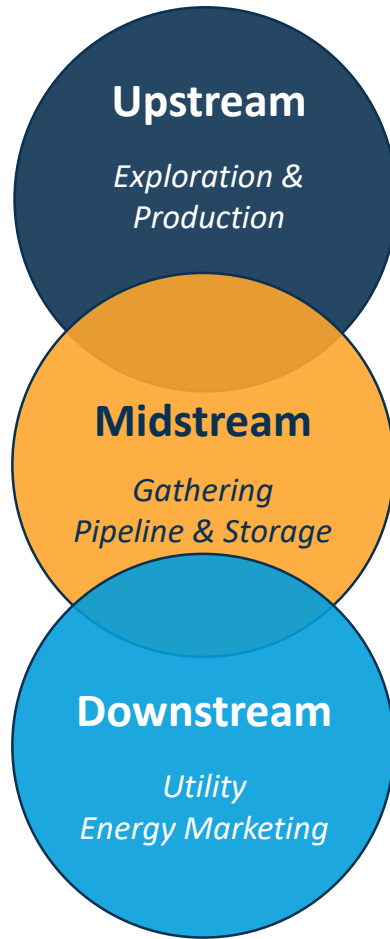


(1) This presentation includes forward-looking statements. Please review the safe harbor for forward looking statements on slide 2 of this presentation.

(2) Twelve months ending June 30, 2019.

Integrated Model Enhances Value...

Geographic and Operational Integration Drives Synergies



- ✓ Co-Development of Marcellus and Utica
- ✓ Just-in-time gathering facilities
- ✓ Pipeline expansion opportunities



- ✓ Rate-regulated entities share common resources, reducing operating expense
- ✓ Utility business is a large Pipeline & Storage customer

... and Drives Organic Growth Opportunities



Near Term Strategy Leverages Integration Across the Value Chain



- ✓ Integrated Upstream and Midstream development of 785,000 acre Marcellus and Utica shale position
- ✓ Further expansion of interstate pipeline systems to satisfy growing natural gas supply and demand
- ✓ Ongoing investment in safety and modernization of pipeline transportation and distribution systems

Visions and Perspective as an Integrated Company

NFG: Our Core Values

National Fuel's Guiding Principles



Safety

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



Innovation

We strive to exceed the standards for safe, clean, and reliable energy development. We invest in the future of our regions' energy resources. We envision a long and healthy future for our company.



Environmental Stewardship

We play a unique and vital role in upholding standards of environmental protection in every area of our business. We are proactive and detailed in our compliance with local, state, and federal laws.



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.



Community

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



Transparency

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

National Fuel's Commitment to the Environment

We strive to:

- ✓ Integrate environmental protection into planning and decision-making
- ✓ Monitor environmental performance and make corrective actions to stimulate continual improvements
- ✓ Promote and encourage energy conservation and environmental protection through new technologies
- ✓ Encourage employees to take responsibility for preserving and protecting the environment



To see our entire Environmental Policy Statement please visit:
<https://www.natfuel.com/CorporateResponsibility/nat-fuel-enviro-policy-statement.pdf>

Sustainability – Methane Emissions - Transparency



Seneca Resources – member of EPA’s Natural Gas STAR program since 2015. A program focused on identifying opportunities and implementing emission reducing technologies throughout operations.



Seneca Resources – member of the American Petroleum Institute’s (API) Environmental Partnership since 2018. An industry led organization to share best practices and new technology information relating to emissions controls with commitments to implement those controls.



NFG Supply & Empire Pipeline worked with the Interstate Natural Gas Association of America (INGAA) to develop a set of voluntary methane emissions commitments to continuously improve practices to minimize methane emissions from interstate natural gas transmission and storage operations. Commitments were finalized and agreed upon in 2018.



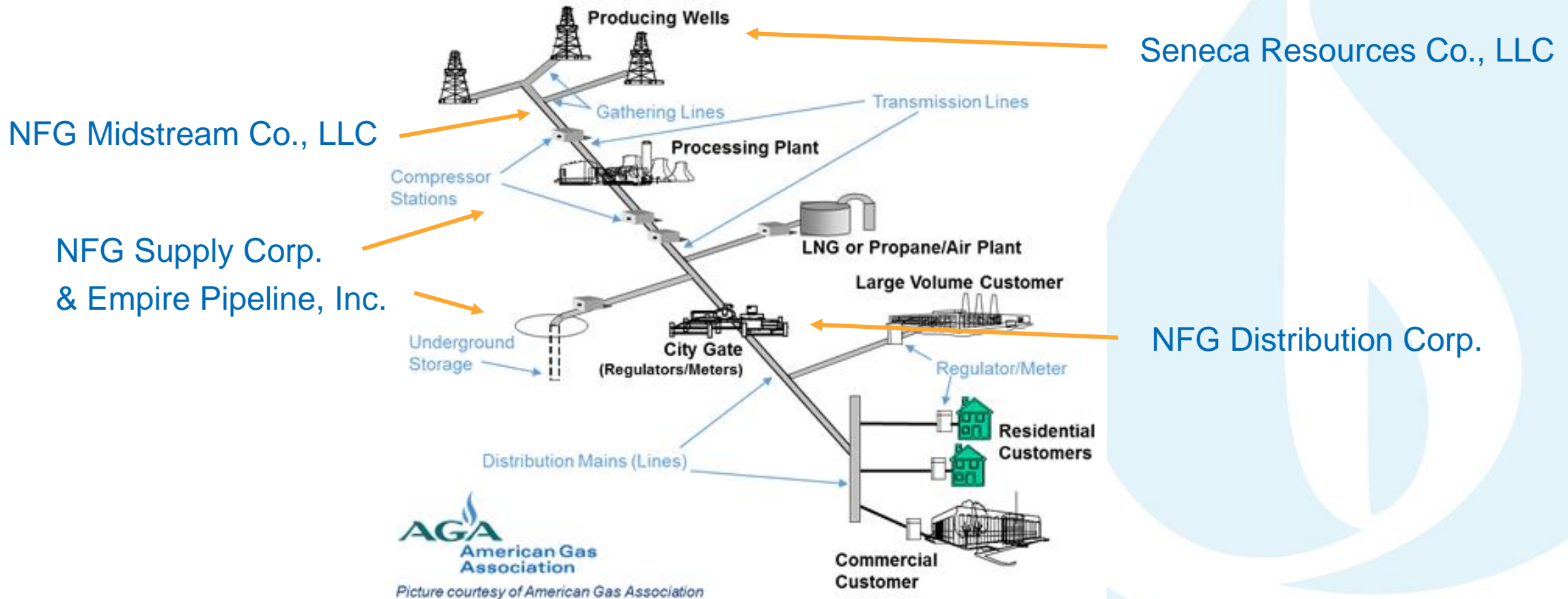
NFG Distribution worked with the American Gas Association (AGA) to develop a set of gas utility-focused metrics for environmental, social, governance and sustainability to assist AGA-member natural gas utility companies in their voluntary sustainability reporting. Starting in 2018, NFG Distribution published data from the previous year.

Methane Challenge Commitments

Overview

Reducing Methane Emissions

In October, 2018, five subsidiaries of National Fuel Gas Company volunteered to participate in the U.S. EPA Methane Challenge by making independent commitments under the Methane Challenge Best Management Practices Option



Methane Challenge Commitments – Seneca Resources



Pneumatic Controllers

Onshore Production, Gathering & Boosting, Processing

- Utilize natural gas-actuated controllers ≤ 6 scfh, or
- Utilize zero emitting controllers (e.g., instrument air, solar, electric, or mechanical controllers), or
- Remove natural gas pneumatic controllers from service with no replacement

Reciprocating Compressors - Rod Packing

Gathering & Boosting, Processing

- Commit to enhanced maintenance schedule, or
- Route rod packing vent to a capture system for beneficial use, to flare, or to a control device to achieve at least 95% reduction in methane emissions



Fixed Roof, Atm. Pressure Hydrocarbon Storage Tanks

Onshore Production

- Commit to installing vapor recovery units at all future and existing hydrocarbon liquid storage tanks



Methane Challenge Commitments – Supply, Empire, & Midstream



Committed in 2018

Pneumatic Controllers

- Supply, Empire, & Midstream
- Prioritize compressor stations
- Conduct inventories and replace high bleed pneumatic devices when practical

Committed in 2018

Rod Packing

- Supply & Midstream
- Commit to maintenance schedule of 26,000 operating hours
- Document results annually as they occur

Approval Pending

Equipment Leaks/Fugitives*

- Supply
- Commit to measuring leaks from Isolation & Blowdown Valves
- Develop a valve maintenance, repair, and replacement program

Methane Challenge Commitments – Distribution



Mains – Cast Iron & Unprotected Steel

- Based on remaining mileage – minimum 2% per year replacement rate
 - *Commit to 3% per year replacement rate*
- Emphasis on eliminating Cast Iron in the next 4 years. 46 miles remain in NY LDC.

Services – Cast Iron and Unprotected Steel

- Upgrade services when unprotected steel/cast iron mains are upgraded
- Distribution does not have any Cast Iron services in its system

Excavation Damages

- Commit to reducing the number of third-party damages to the Distribution system
- Actively promote excavation safety
- Collect data & analyze incidents
- Proposing to collect and report data through 2021, then assess goal

Historical Reductions

The background features a solid blue color with a large, faint, light-blue circular graphic on the right side. Inside this circle are several overlapping teardrop or leaf-like shapes, also in a lighter shade of blue, creating a layered, organic pattern.

Historical Highlights – Seneca Resources



Seneca Resources Company, LLC
 Onshore Production, Gathering & Boosting, and Natural Gas Processing
 Best Management Practice Commitment Option
 Methane Challenge Partner Since 2018

OMB Control No. 2060-0722
 Approval expires 08/31/2021



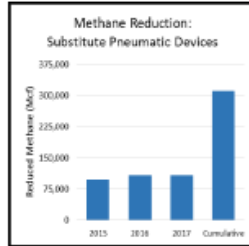
Background

Seneca Resources Company, LLC (Seneca), the exploration and production segment of National Fuel Gas Company, explores for, develops and produces natural gas and oil reserves in California and the Appalachian Region including the Marcellus and Utica Shales. Seneca is committed to reducing methane emissions and to limit its environmental footprint. Since joining EPA voluntary methane reduction programs, Seneca has documented methane reduction strategies totaling 888,468 Mcf from 2015 through 2017. In 2018 Seneca has expanded its participation in voluntary methane reduction strategies which will be aimed at continuous improvement.

Historical Highlights

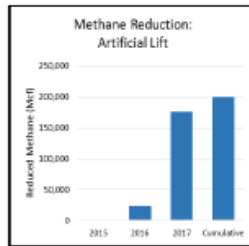
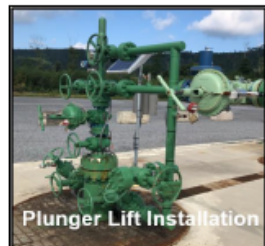
Substitute Pneumatic Devices with Low or Zero-bleed Devices

Seneca has identified and categorized its pneumatic controllers. In total, 950 of these devices have been substituted to low or zero-bleed controllers. This has resulted in a methane reduction of 310,755 Mcf.



Artificial Lift: Plungers/ Foaming Agents/ Nitrogen Lift

Seneca proactively utilizes several artificial lift technologies in an effort to maximize the well's flowing performance which minimizes potential methane emissions. Some of these technologies include installing plunger lifts, employing foaming agents, and utilizing nitrogen lift procedures. This methane reduction strategy has resulted in 199,630 Mcf of reduced emissions.



Minimizing Emissions While Manually Unloading Wells

- Seneca uses several methods to reduce emissions during unloading wells.
- Preventing wells from loading and managing loaded wells are parts of the solution.
- See presentation from Seneca at this conference.
- **CO₂e reduction ≈ 96,000 metric tons**

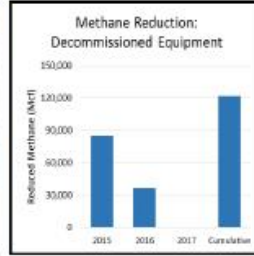


Historical Highlights – Seneca Resources

Seneca Resources Company, LLC Historical Fact Sheet

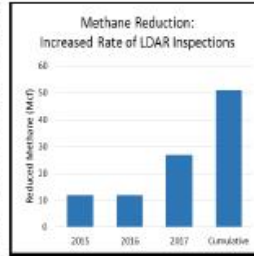
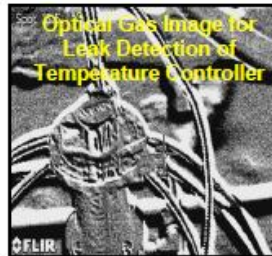
Eliminate unnecessary equipment and/or systems

Seneca regularly reviews engineering and design of both existing and new facilities and equipment in order to identify opportunities to eliminate redundant and/or unnecessary equipment. Past improvements have included compression systems, produced water tanks, test/bulk separators, and gas processing equipment. Through these engineering improvements, Seneca has been able to achieve a methane reduction of 121,718 Mcf.



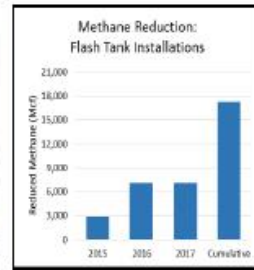
Increased Rate of LDAR Inspections

In an effort to proactively identify and repair all methane leaks, Seneca performs Leak Detection and Repair Inspections following and often exceeding the most stringent regulatory requirements across all of its facilities regardless of applicability. This increased inspection schedule has reduced potential methane emissions by an estimated 51 Mcf since 2015.



Install Flash Tank Separators on Glycol Dehydrators

Seneca has reduced its methane emissions by 17,250 Mcf through the installation of Flash Tank Separators on its glycol dehydrators.



Substitute Pneumatic Devices with Low or Zero Bleed Devices

- Seneca identified and categorized its natural gas driven pneumatic controllers
- 950 of pneumatic controllers have been substituted to low or zero-bleed controllers
- **CO₂e reduction ≈ 149,000 metric tons**



Historical Highlights – NFG Midstream



National Fuel Gas Midstream Co., LLC

Gathering & Boosting
BMP Commitment Option

Methane Challenge Partner Since 2018

OMB Control No. 2060-0722
Approval expires 08/31/2021



Background

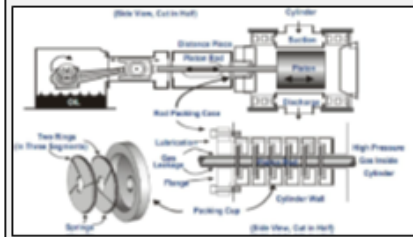
National Fuel Gas Midstream Company, LLC's primary business is to build, own and operate natural gas processing and pipeline gathering facilities in the Appalachian region. As one of National Fuel Gas system companies, Midstream shares in more than 100 years of experience in gathering and processing natural gas. Midstream works with producers confidentially to develop a tailored project to collect locally produced gas at or near the wellhead, to create outlets, to maximize throughput, to reduce operating costs, and to improve reliability while ensuring compliance and safety. For years Midstream has engaged in methane reduction BMPs, some of which are highlighted below from the last five years. Please visit our website for more information on Midstream's continued commitment toward environmental stewardship.

Historical Highlights

Compressor Rod Packing

Monitoring and replacing compressor rod packing systems on a regular basis can greatly reduce methane emissions to the atmosphere. Midstream has implemented interval based rod packing changes for reciprocating compressors. This practice has resulted in methane reductions of approximately 200,000 Mscf for the past 5 years.

Typical Compressor Rod Packing System



Flash Tanks

Dehydrators utilize triethylene glycol (TEG) to remove water from natural gas. In addition to absorbing water, TEG also absorbs methane. The TEG is recycled via a reboiler, which vents absorbed water and methane into the atmosphere. Flash tanks are an emission reducing technology that recovers entrained methane before the TEG is routed to the reboiler and reduces methane emissions. Midstream incorporates flash tanks on all of the dehydrators system-wide. By utilizing flash tanks, methane emissions have been reduced by approximately 130,000 Mscf over 5 years.



Install Flash Tanks on Dehydrators

- Recovers entrained methane in triethylene glycol
- Midstream incorporates flash tanks system-wide
- **CO₂e reduction ≈ 62,000 metric tons**



National Fuel Gas Midstream

Historical Highlights – NFG Midstream

National Fuel Gas Midstream Co., Historical Fact Sheet



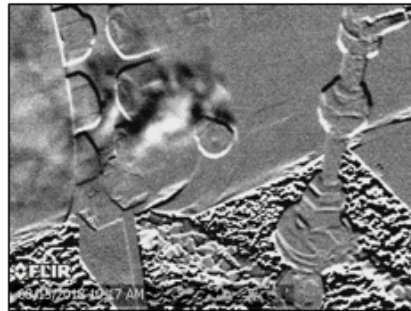
Capped ESD Testing

Midstream is committed to testing emergency shut down (ESD) systems at natural gas compressor stations on an annual basis. To minimize gas vented to the atmosphere, Midstream adopted the acceptable DOT alternate of utilizing blind flanges. The blind flanges prevent entire station blowdowns, while allowing ESD testing in order to ensure facility safety. Over the last 5 years approximately 52,000 Mscf of methane has not been vented while utilizing this alternative practice.



Leak, Detection, & Repair (LDAR)

LDAR is a leak monitoring program in combination with a repair program and reduces fugitive methane emissions. Midstream utilizes an Optical Gas Imaging (OGI) camera to detect leaks. Over the past 5 years Midstream has reduced approximately 23,000 Mscf of methane with the implementation of LDAR.



Air-Fuel Ratio (AFR)

Automated air-to-fuel control systems optimize compressor engine fuel efficiency which also reduces fuel use. Within the past 5 years, Midstream has saved approximately 233 MMscf of natural gas due to AFR fuel efficiency gains. This has resulted in decreased combustion emissions by approximately 12,725 CO₂e metric tons.

Reduction equivalent to any one of the following: ¹



Capped Emergency Shutdown (ESD) Testing

- Committed to testing ESD systems at compressor stations on an annual basis
- Adopted acceptable DOT alternative: blind flanges
- Prevents entire station blowdowns
- CO₂e reduction ≈ 25,000 metric tons



National Fuel Gas Midstream

Historical Highlights – NFG Supply



National Fuel Gas Supply Corp.

Transmission & Storage
BMP Commitment Option
Methane Challenge Partner Since 2018

OMB Control No. 2080-0722
Approval expires 08/31/2021



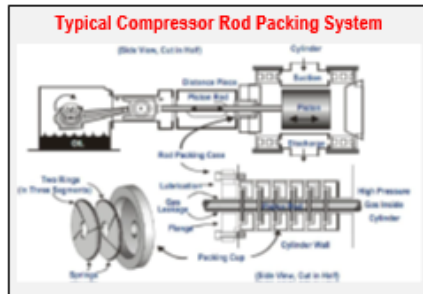
Background

The Pipeline & Storage segment of National Fuel Gas Company specializes in the interstate transportation and storage of natural gas. For more than 100 years, we've been successfully serving local utilities, pipelines, marketers and electricity generators. Supply's approximately 2,500-mile FERC-regulated interstate natural gas pipeline system extends from southwestern Pennsylvania to the New York-Canadian gateway at Niagara, eastward to the Ellisburg-Leidy Hub, and westward to the Appalachian Basin. For years Supply has engaged in methane reduction BMPs, some of which are highlighted below from the last five years. Please visit our website for more information on our continued commitment towards environmental stewardship.

Historical Highlights

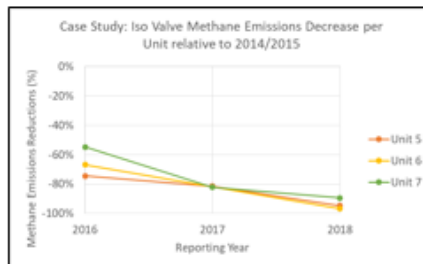
Compressor Rod Packing

Monitoring and replacing compressor rod packing systems on a regular basis can greatly reduce methane emissions to the atmosphere. Supply has implemented interval based rod packing changes for reciprocating compressors. This practice has resulted in methane reductions of approximately 508,000 Mscf for the past 5 years.



Isolation Valve Program

The EPA annual greenhouse gas (GHG) inventory data indicates about 80-90% of fugitive leaks at T&S compressor station emissions are from compressor components which include isolation valves, blowdown valves and rod packing. Utilizing this information, Supply has implemented a program that focuses on isolation valve maintenance, repair, and/or replacement. Thus far, this program has resulted in methane reductions of approximately 223,000 Mscf.



Isolation Valve Program

- EPA's annual GHG inventory data indicates 80-90% of fugitives at T&S compressor station emissions are from isolation & blowdown Valves, and rod packing
- Supply targeted isolation valves
- NFG Case Study: Maintenance & replacement of isolation valves (9 in total) on 3 units
- **CO₂e reduction ≈ 109,000 metric tons**



Historical Highlights – NFG Supply

Eliminating facilities & achieving efficiencies

CO₂e Reduction ≈ 110,000 metric tons

Example: Porterville Compressor Station Modernization



- Removed four 150-hp 1950's vintage units
- Modernization included replacement of ALL station piping, valves, measurement, filtration, and heaters
- Installed one 400-hp GE Waukesha F18SE compressor engine

Historical Highlights – Empire Pipeline



Empire Pipeline, Inc.
Transmission & Storage
BMP Commitment Option
Methane Challenge Partner Since 2018

OMB Control No. 2080-0722
Approval expires 08/31/2021



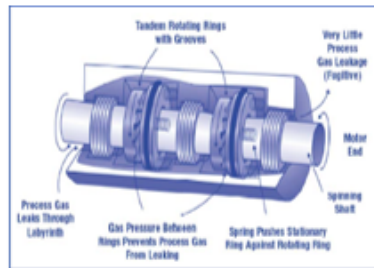
Background

The Pipeline & Storage segment of National Fuel Gas Company specializes in the interstate transportation and storage of natural gas. Empire Pipeline is a FERC-regulated interstate pipeline system that generally transports natural gas from various receipt points in southern New York and at the Pennsylvania border to various local distribution companies, end-users and other interstate pipelines in Western and Central New York and Canada. Empire Pipeline started operations in 1993. For years Empire has engaged in methane reduction BMPs, some of which are highlighted below from the last five years. Please visit our website for more information on Empire's continued commitment towards environmental stewardship.

Historical Highlights

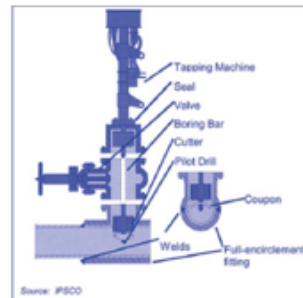
Dry Seals

Dry gas seal technology significantly reduces methane from centrifugal compressors. Empire has ensured that all centrifugal compressors have dry seals. This design decision has resulted in methane reductions of approximately 48,000 Mscf in the past 5 years.



Hot Taps

Hot tapping is an alternative to blowing down a line when making a new connection to a natural gas pipeline. Empire employs this technology when possible. Within the past 5 years, the utilization of hot taps have resulted in methane reductions of approximately 22,000 Mscf.



Hot Taps

- Alternative to blowing down a line when making a new connection to the pipeline
- Empire uses this technology when feasible
- **CO₂e reduction ≈ 10,000 metric tons**



empire pipeline

Historical Highlights – NFG Distribution



National Fuel Gas
Distribution Corporation

Segment: Distribution
BMP Commitment Option
Methane Challenge Partner Since 2018

OMB Control No. 2060 0722
Approval expires 08/31/2021



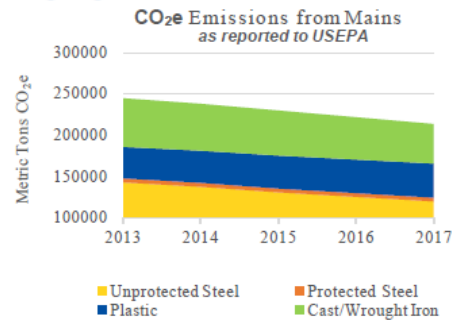
Background

National Fuel Gas Distribution Corporation ("NFGDC") is a natural gas utility serving approximately 750,000 residential, commercial, and industrial customers in western New York and northwestern Pennsylvania. NFGDC has a deep appreciation for the vital role it plays in upholding standards of environmental protection in the communities where its customers and employees work and live. As part of that responsibility, NFGDC is committed to reducing methane emissions from its operations.

Historical Highlights

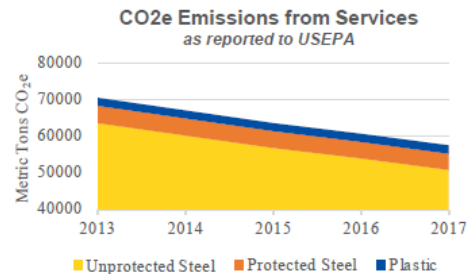
Upgrading Cast Iron and Unprotected Steel Mains

NFGDC continuously upgrades its distribution system in order to ensure safe and reliable delivery of natural gas. These upgrades also benefit the environment by reducing methane emissions. From 2013 to 2017, upgrading mains has reduced NFGDC's estimated emissions by about 7,700 metric tons CO₂e per year on average. That's about the same as the emissions from over 1,635 passenger vehicles.

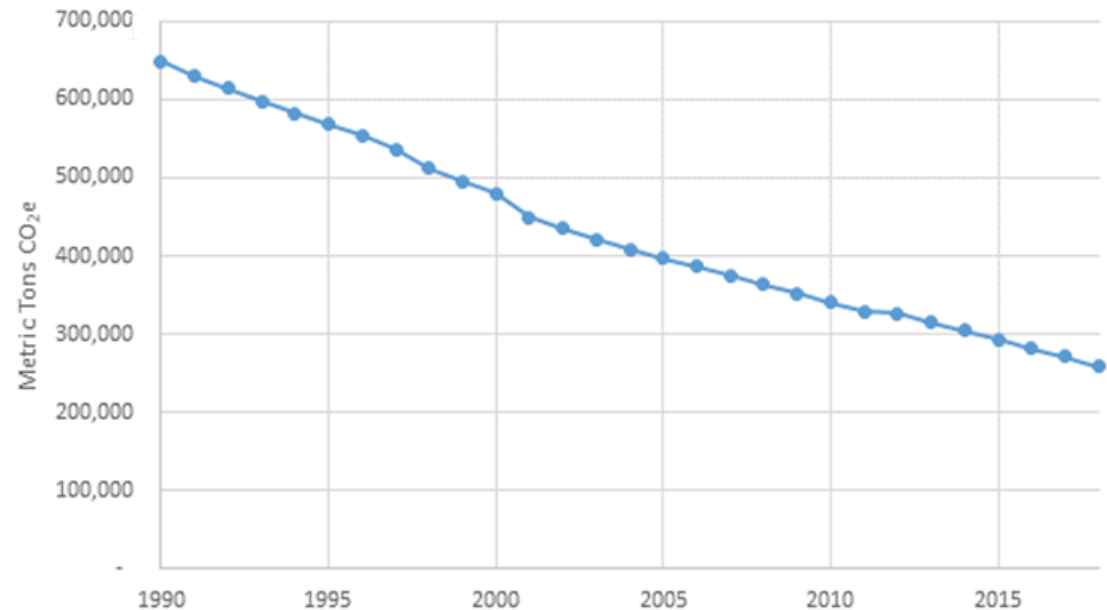


Upgrading Unprotected Steel Services

NFGDC also upgrades services – the small diameter pipe that connects the customer to the main – when mains are upgraded. On average, NFGDC replaces approximately 4,000 unprotected steel services every year resulting in another 3,400 metric tons CO₂e of reduced emissions annually. That's another 722 cars.

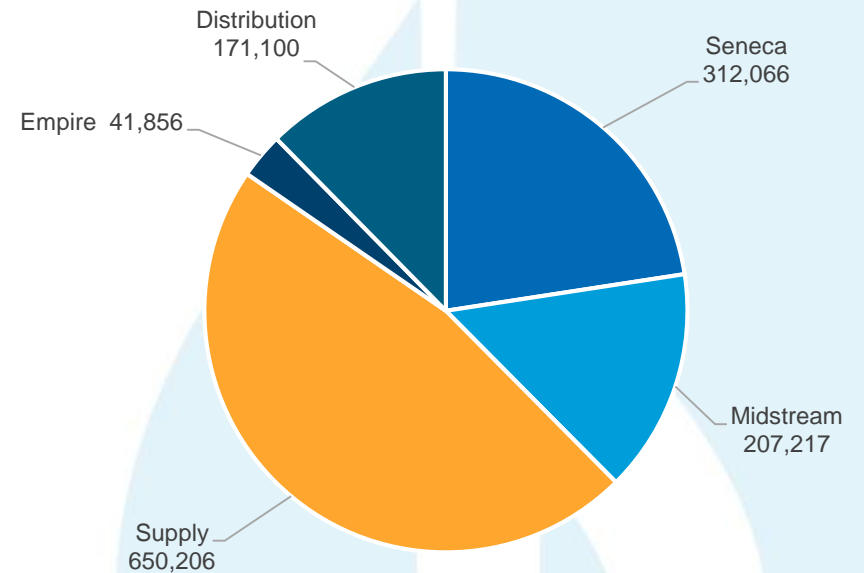


National Fuel Gas Distribution Corp. Emissions as CO₂e
1990-2018: Mains & Services Only



Recent Reductions \approx 1,380,000 metric tons of CO₂e

Reductions equivalent to any one of the following: ⁽¹⁾



(1) <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>

Thank you!

