

2023

SUSTAINABILITY
REPORT



northeast
NATURAL ENERGY

DELIVERING ON COMMITMENT

clean.
abundant.
natural.



Mike John

Mike John

PRESIDENT / CEO

In 2021, NNE made the transformative decision to seek certification under the Equitable Origin and MiQ standards. While we took pride in being the first operator in the country to achieve this dual certification, this was just the first step for our company. The real work started in 2022, with our commitment to continuous improvement within our operations.

We focused on 3 key areas:

1. Reducing greenhouse gas emissions from all segments of our operations
2. Improving workplace policies and procedures
3. Committing to expanded community engagement

Operating a full year under our dual certification meant delivering on the commitments we made at the beginning of that process. As a result of our efforts in 2022, we successfully maintained our dual certification status, through evaluative post-ante and annual auditing processes conducted by Equitable Origin and MiQ approved third-party assessors.

We implemented emissions measuring and monitoring processes to accurately target operational improvements that will help us achieve our emissions reduction goals. Currently, we rank in the top 10% of operators in the United States.

In 2022, we increased our production by 27%, by turning 22 new wells into production, all while reducing our methane intensity by 27%. This was accomplished through several emissions reduction innovations— while maintaining our commitment to safety. I am proud of our collective Operations Team for continually evaluating processes and seeking out symbiotic opportunities that result in not only reducing our impact on the environment but also increasing our efficiency and production. This report highlights those innovations and provides a preview of projects planned for 2023.

A vitally important financial and governance goal achieved last year was successfully establishing a new credit facility, which will provide capital stability to support our continued growth for the foreseeable future. Our demonstrated commitment to our ESG principles, we believe, served us well in getting this done. The support we received from our investment community validates our business model, reinforces the strategies we have in place and certainly buoys our operational resilience.

In 2022 we reconnected with our community stakeholders in a more meaningful way, by establishing our in-house Community Engagement Committee. With a charter to seek out and evaluate engagement opportunities in the core areas of addressing childhood hunger, promoting STEM education, and supporting environmental and recreational projects, this team was successful in creating partnerships with local non-profit organizations, schools, and government agencies to make a positive impact in a variety of far-reaching projects. This report highlights several of those opportunities.

I am again reminded that our best asset, by far, is our people. Policies and procedures can be drawn up in board rooms, but real innovation, real change is born on the front lines – by people who care about what they do, and how their performance impacts not only their company, but how it impacts their communities.

We often say, “We Live Here, We Work Here” and I think that shows in the unified commitment of our team. In 2022, we saw our people rise to the challenges set forth in the commitments we made and deliver the expected positive results. I am anxious to see what they do in 2023.



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Overview

Private Equity E&P
with Headquarters in
Charleston, WV

Operations office
in Morgantown, WV

52,500

Net acres across northern
WV and western PA

129

Dry gas Marcellus wells
producing on 17 pads in WV

2021
23 Drilled wells

16 wells
Completed
& Producing

2022
18 Drilled wells

22 wells
Completed
& Producing

2023
21 Planned wells

20 wells
to be Completed



Committed to Safety

We remain steadfast in our commitment to the safety of our employees, contractors, and communities.

Northeast Natural Energy managers are diligent about enforcing the safe working expectations of everyone performing even the smallest task on one of our well pads.

- Daily Safety Inspections
- Pre-shift safety meetings for all active drilling, completions and construction projects
- Formal safety training for employees and in-house contractors
- Internal and third-party safety audits
- Implementation of Veriforce Contractor Management System, to ensure safety performance and compliance with Northeast Natural Energy policies



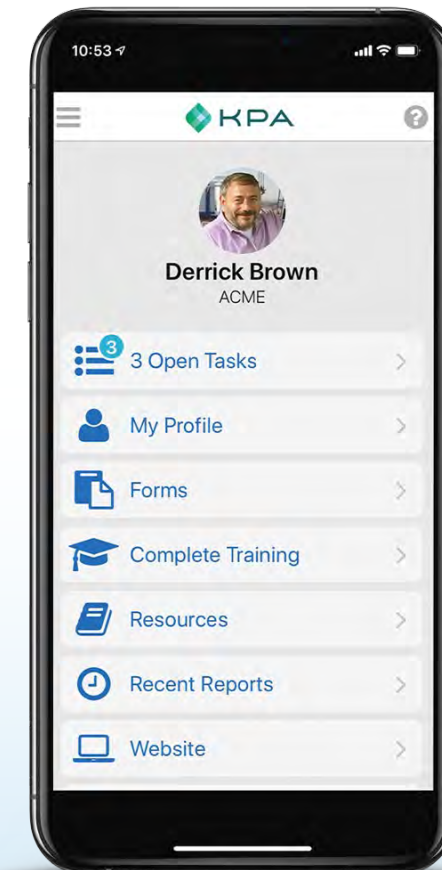
2022 Total Reportable Incident Rate— Committed to Safety

No OSHA
reportable
or lost time
incidents!

0.0



NNE implemented KPA EHS software to record and track safety inspections, to assign corrective action tasks, and to follow up on item resolution





RECERTIFICATION



Dual Certification

After being **the first producer to achieve** certification for nearly 100% of its production from both MiQ and Equitable Origin, Northeast Natural Energy **successfully maintained** that status by completing the full-year audits by both organizations.

Continuous improvement goals set in 2021 for both certifications were verified by third-party auditors.



Equitable Origin Five Principles – Northeast Natural Energy Assessment

5 GUIDING PRINCIPLES

These are the five guiding principles developed by Equitable Origin that are applied to every company seeking certification. The underlying goal is continuous improvement, with subsequent re-verification improvement targets becoming increasingly more difficult to attain.

Principle	2021 Certification Assessment	2022 Re-Verification Assessment
1: Corporate Governance, Transparency & Ethics	86%	100%
2: Human Rights, Social Impact, Community Development	79%	93%
3: Indigenous Peoples' Rights	N/A	N/A
4: Fair Labor & Working Conditions	86%	98%
5: Climate Change, Biodiversity & Environment	92%	100%



Continuous improvement goals set in 2021 verified by third-party auditors.

Continuous Improvement Commitments

As a result of exceeding our continuous improvement commitments in 2022, we were recertified by both Equitable Origin and MiQ, as verified by Responsible Energy Solutions, LLC - an approved third-party auditor for both organizations.

- Developing ISO 14001 Equivalent Operations Management System
- Reducing Greenhouse Gas Emissions
- Annual Corporate and Operational Audits
- Establishing Key Performance Indicators
- Implementing Robust Stakeholder and Community Engagement Plan
- Reporting Economic Impact and Benefit to Communities
- Developing a Contractor Management System



Contractor Management System



NNE partnered with Veriforce to implement our Contractor Management System.

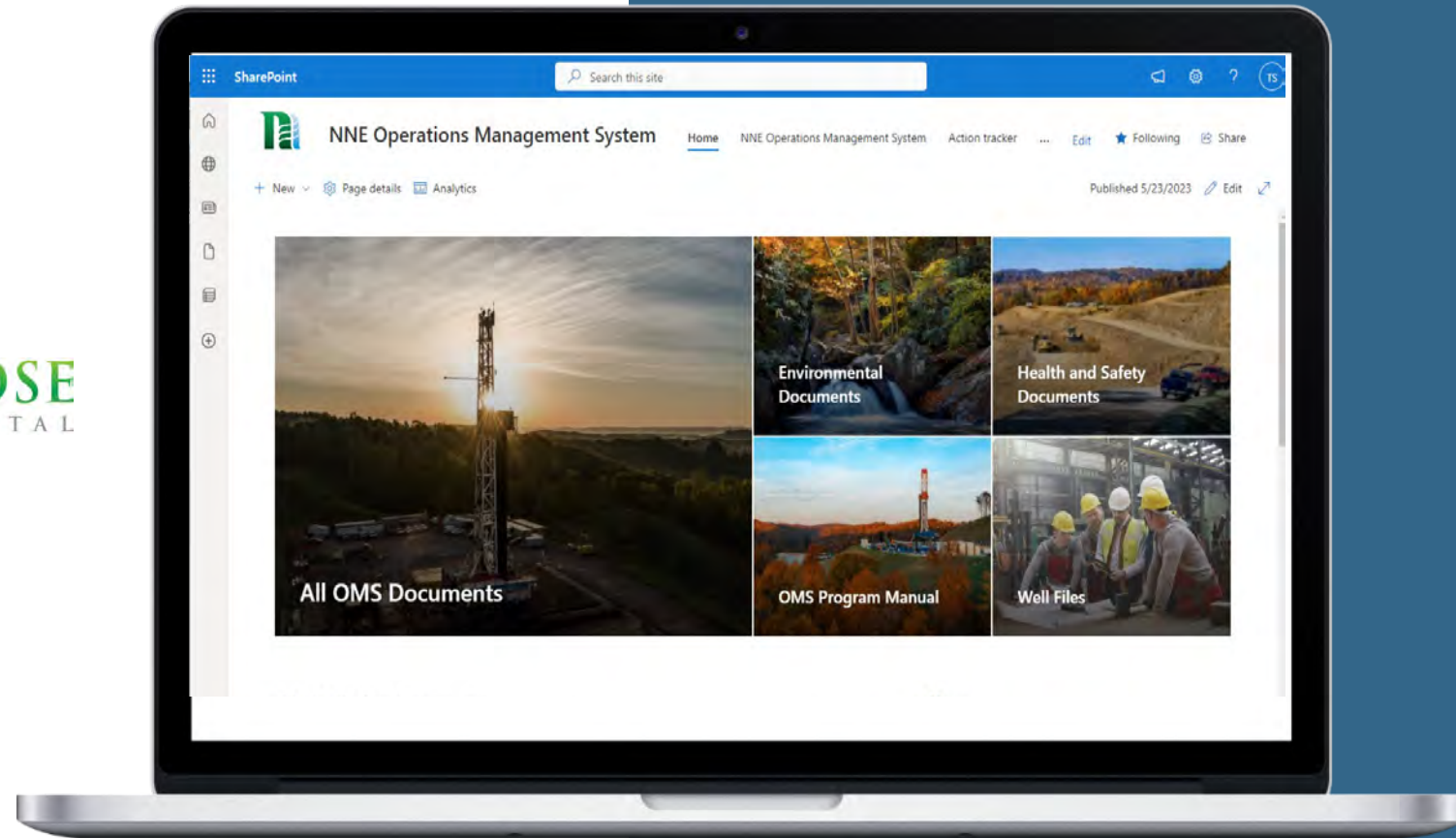
Veriforce provides key solutions required to efficiently and effectively manage critical compliance programs, including certificates of insurance and contractor safety programs.

RESPONSIBLE GOVERNANCE

Operations Management System



We selected Environmental Standards (now part of Montrose Environmental), to help us develop our Operations Management System, with the mission to establish programs within Northeast Natural Energy (for employees and contractors) that ensure our assets are developed in a manner that respects our broader responsibility to the communities in which we live and work and to the environment and natural resources we all rely upon.



- Environment
- Health and Safety
- Regulatory
- Community Obligations and Commitments



NNE maintained an “A” grade for overall performance during the annual period since initial certification.

MiQ– Northeast Natural Energy Audit

Table 1: Full Year Assessment Criteria

Certification Criteria		
Certification:	Initial	Full Year
Overall Certification Grade:	A	A
Methane Intensity:	A	A
Company Practices:	A	A
Monitoring Technology Deployment:	A	A
Certifying Body: Responsible Energy Solutions, LLC		



Continuous improvement goals set in 2021 verified by third-party auditors.

Continuous Improvement Commitments

- Annual corporate and operational audits
- Implementing quarterly OGI Leak Detection and Repair Surveys
- Implementing quarterly Aerial Facility Scale surveys
- Implementing the training and weekly use of handheld methane monitors by well tenders
- Continuing to monitor and identify performance indicators

MiQ is the fastest growing and most trusted methane emissions certification standard.

The MiQ Standard is an independent framework for assessing methane emissions from the production of natural gas, along with the policies and practices of the producers making it.



>172 Million Certificates

Northeast Natural Energy was issued >172 Million certificates from MiQ in 2022, representing the volume of responsibly sourced natural gas produced.

These certificates are available via third-party registries for end-use customers desiring cleaner energy.

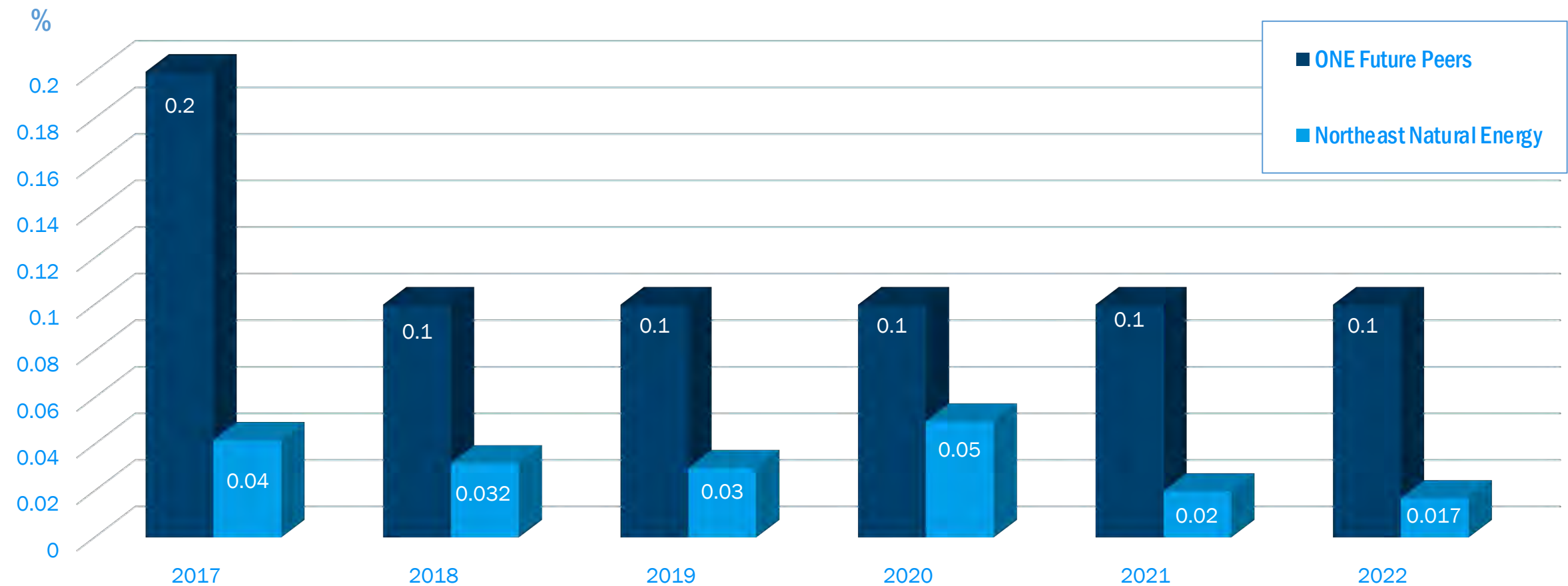


ENVIRONMENTAL PERFORMANCE

Methane Intensity



Methane Emissions
Trending Down
Year-over-year



Reducing Greenhouse Gas Emissions

Our partnerships and participation in industry organizations help us focus on top issues to address.

In 2020, Northeast Natural Energy embarked on a commitment to identify and reduce or eliminate Greenhouse Gas emissions from every aspect of our operations.

We evaluated our processes in key areas:

Drilling • Completions • Production





— P A R T N E R —



NNE is partnering with West Virginia University's Mechanical and Aerospace Engineering Department Center for Alternative Fuels, Engines, and Emissions to research sources of fugitive methane emissions from various production equipment at its well pads.

The studies include collecting operating data and analyzing samples from pneumatic control devices, produced water storage tanks, and compressor engines. Data collection began in the Summer of 2022 and evaluation of those data continue in 2023.

WVU was recently awarded a grant from the US Department of Energy to expand their research of tank emissions, in which NNE will proudly participate.

31%

Reducing Natural Gas Emissions

As of the end of 2022,
NNE had eliminated
natural gas emissions
from 31% of its existing
production equipment.



Water Use & Recycling

NNE continues to find ways to increase its reuse of produced water in well completions design, reducing the volume of fresh water needed.

109%

WATER RECYCLE RATE

Based on wastewater generated in 2022



– 2020 –
98%

– 2021 –
108%

– 2022 –
109%



OPERATIONAL INNOVATIONS



Reducing Emissions with Natural Gas-Powered Drilling Rigs

Northeast Natural Energy partnered with Patterson-UTI Drilling to replace diesel generators with Waukesha natural gas reciprocating engines to provide power for drilling rigs.

100%

Field Gas produced from NNE Wells



Operational Innovations

In partnership with our cement provider, NextTier, NNE made the switch from Class A to **Class L Cement** resulting in a 25% reduction in this Scope 2 GHG emissions.

25%

REDUCTION in Scope 2 GHG
Emission Source

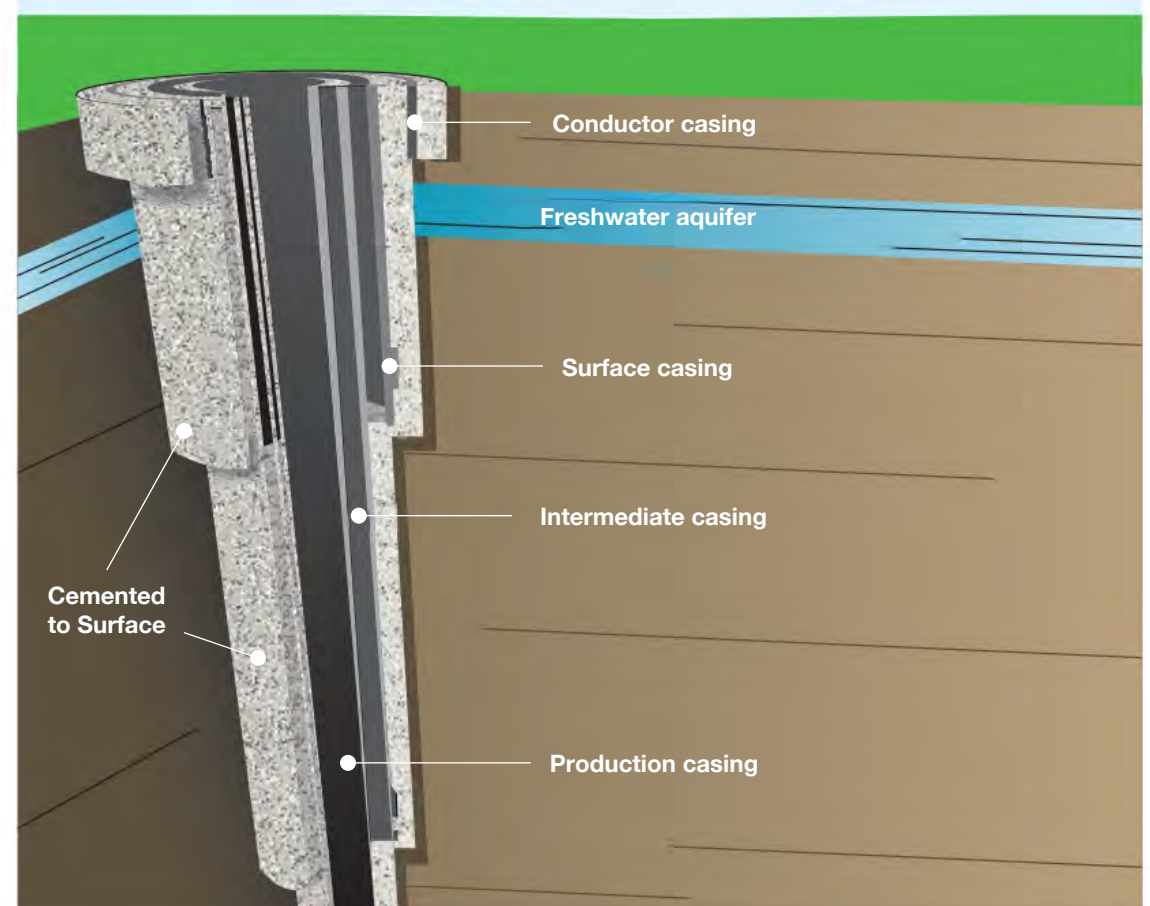
Class L —
Two main benefits:

1

Reduction of CO₂
by 25% compared to
Joppa API Class A
manufacturing

2

Equivalent performance
compared to our
current API Class A





NNE partnered with ProFrac's Dual Fuel fleet in 2022 on the ERP, McClellan, Phoenix, and Yost Pads

41%

Using NNE field gas to achieve 41% NG substitution

9,840 GAL/DAY

Eliminating 9,840 gallons of diesel fuel per day

\$43,312 PER DAY

Average daily savings of \$43,312 utilizing field gas vs. a Tier II diesel fleet



Operational Innovations

NNE is the ONLY operator in the Appalachian Basin to use a natural gas driven drilling rig, cutting emissions of Nitrogen Oxides and Particulate Matter by more than 99%, Carbon Monoxide by 34% and Carbon Dioxide by 7%.

NNE employed dual fuel pumping and electrical generation equipment for all well completion projects in 2022.

**2.3
Million**

GALLONS OF FUEL SAVED

**23,005
Metric Tons**

EMISSIONS ELMINATED

**\$12.7
Million**

COST SAVINGS

Vapor Recovery Project

The Northeast Natural Energy Production Team installed state-of-the-art vapor recovery equipment on production tanks at its ERP Well Pad in Monongalia County, WV.

The recovery equipment captures minor fugitive methane emissions from produced water storage tanks and ancillary processing equipment channeling it through piping to an onsite combustor, where the methane is completely combusted, eliminating the concern of methane emissions to the atmosphere. We are evaluating further applications at additional well pads.



Upgrading Pneumatic Controllers Natural Gas to Nitrogen

In 2022, the Northeast Production Team engaged the clean technology company, Kathairos Solutions, that specializes in converting pneumatic control devices from using natural gas to nitrogen.

Nitrogen is an inert gas and readily available commercially throughout North America. The Kathairos system has no moving parts, requires no maintenance or onsite power and generates zero onsite methane emissions. It also utilizes existing operator equipment (with some modifications), only adding a cryogenic tank system, to store and distribute liquid nitrogen.



Replacing Natural Gas-Driven Pneumatic Controllers Compressed Air or Nitrogen as Motive Gas

NNE has committed to using only compressed air as motive gas for pneumatic controllers on all new production equipment. In addition, NNE has begun the process of changing out motive gas for existing pneumatic controllers to either compressed air or nitrogen, with plans to retrofit an additional 23% this year.

75%

PNEUMATIC
CONTROLLERS
W/ N₂ OR AIR
ACTUATORS



EYES IN THE SKY



**Drones
identify
leaks and
fugitive
emissions**

Facility and Source Level Methane Monitoring

Northeast Natural Energy continues employing drones and Optical Gas Imaging cameras to survey all our production equipment to identify leaks and fugitive emissions.

This effort ensures compliance with the strict standards of our certifying organizations, helping us bring our differentiated natural gas to market.

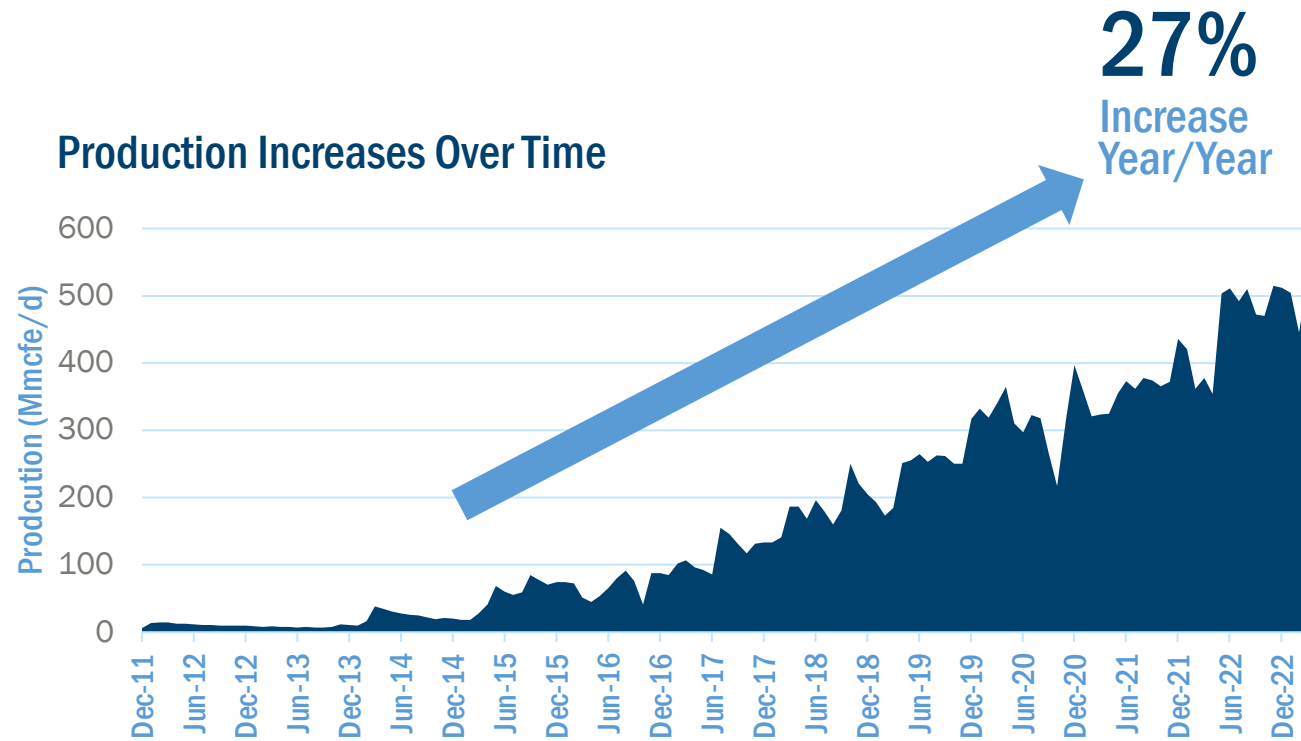


Part of the Routine— Handheld Methane Monitoring

NNE Well Tenders are equipped with monitors to conduct Audio-Visual-Olfactory inspections daily. They discover leaks quickly and make sure repairs are expeditiously completed. According to our Leak Tracker Pro System, leaks are repaired on average within **0.7 days** of discovery.



Consistent Growth



Reached and exceeded 0.5BCF/day production in 2022
Forecast to surpass 0.75BCF/day in 2023



Water Use & Recycling

We have installed more than 42 miles of water pipeline infrastructure to quickly move water resources around our operating area and reduce truck traffic, with more than 13 additional miles under construction.

Using our 540,000+ BBL storage capacity at strategic locations around our pipeline system ensures operational resiliency during well development projects.

Water sharing agreements with various peers helps eliminate the need for disposal.

42

Miles of water pipeline infrastructure installed

13

Additional miles of pipe under construction



Piping reduces truck traffic, reduces fuel costs, and improves the safety of roads in our operating area

140,996

TRUCKLOADS ELIMINATED

3,905,576

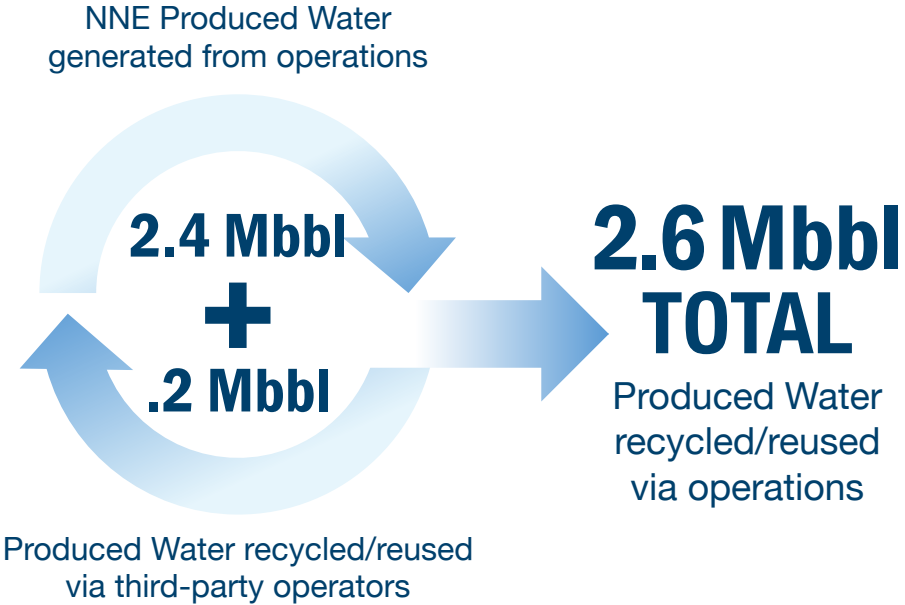
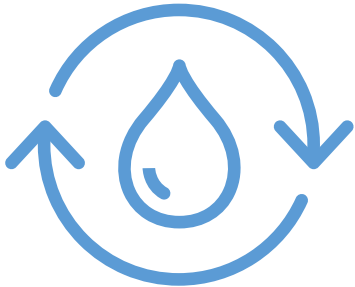
TRUCK MILES AVOIDED

Reducing Scope II CO₂ emissions by 6.6 Metric Tons





Water Use & Recycling in 2022



Building for the Future

2022 Construction Activity

- Sullivan Well Pad
- Dolls Run Well Pad
- Gas Fuel Pipelines for upcoming drilling and completions projects
- Water Lines to support completions and production activity
- Daily third-party inspections for compliance with permits

All construction projects are engineered to minimize surface disturbance and environmental footprint of our operations.





northeast
NATURAL ENERGY

COMMUNITY ENGAGEMENT

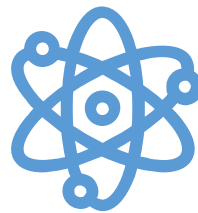
Committed to Community Engagement

A major focus in 2022 was to engage in a more meaningful way with the communities in which we work and live. Transitioning away from life under a pandemic allowed us to seek opportunities to partner with community organizations and to support local school efforts.



**Fighting
Child Hunger**

We formed our own **Community Engagement Committee** with a charter to evaluate community needs primarily in the core areas of fighting child hunger and promoting both STEM education and environmental and recreational enhancement.



**STEM
Education**

Our support is provided through charitable giving and employee volunteerism.

In 2022, NNE finalized a policy that encourages employees to engage in worthwhile volunteer activities – either ones the company sponsors, or another chosen by the employee. Employees are provided paid time off for such activities.



**Environmental &
Recreational Enhancement**

Committed to Community Engagement

A great start in 2022

With the restrictions of COVID behind us, NNE kicked off a concerted effort to engage with our communities and committing support for projects deemed vitally important to our stakeholders in 2022.



Committed to Community Engagement



District Fairs— A Big Deal

District Fairs bring communities together and provide us a way to chat with our neighbors.

The Battelle District Fair has gathered folks for nearly 100 Summers.

Committed to Community Engagement



Barn Raising in Battelle

NNE has long supported area youth involved in 4-H and FFA activities.

Last year, NNE partnered with the Clay-Battelle FFA Alumni Association to build a new livestock barn and show arena to benefit Clay and Battelle District Future Farmers of America and 4H members. The new barn is nearing completion, on the Battelle District Fairgrounds, in Wadestown, Monongalia County, West Virginia.

Committed to Community Engagement

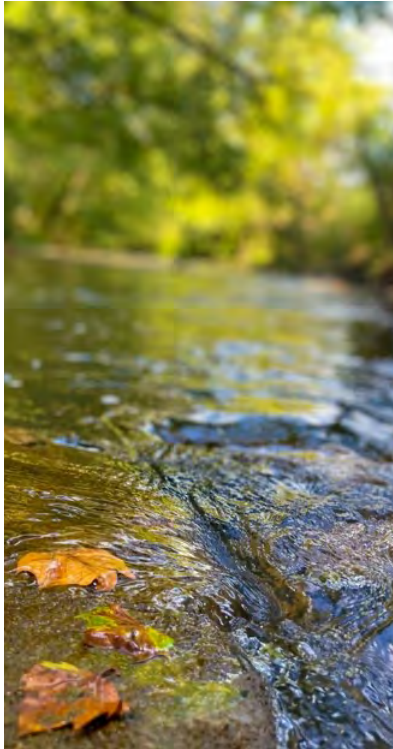
Partners in Education– Mason-Dixon Elementary

NNE became a partner in education with this elementary school located in the heart of our operating area.

We were thrilled to provide two 3-D printers, along with a year's worth of supplies to support STEM educational projects.



Committed to Community Engagement



Save Our Streams– Paw Paw Creek

NNE is partnering with the WV Department of Environmental Protection's Save Our Streams program to monitor the health of a stream we rely on for our operations. Twice a year, we collect and inventory benthic macroinvertebrates, test the water quality, and generally assess stream flow attributes.

Committed to Community Engagement

Feeding Children – Pantry Plus More

As a core tenant of our community engagement efforts, NNE is proud to partner with Pantry Plus More. This inspiring, volunteer organization works to eliminate child hunger via many programs, including operating in-school pantries stocked with food, hygiene products, school supplies, and clothing; providing regular distributions of food and other supplies to families; and, distributing weekend food bags to students every week.



Relationships Matter— Effecting Positive Change

Building mutually beneficial relationships with land and mineral owners is the cornerstone to NNE's success. Our Land Department manages **more than 22,000 active leases** in our core producing area. Last year, **nearly 14,000 individuals received payments** from NNE.

> **22,000** Leases
Nearly **14,000** Individuals Paid

SIGNIFICANT
ECONOMIC
IMPACT





Stakeholder and Community Benefit-Taxes and Royalties Paid

6,300+

Royalty Owners

\$129.2 mil

2022 Royalties Paid

\$36.5 mil

Taxes & Fees Paid



\$165 mil

NNE's
Impact

Looking Forward

Looking ahead for 2023, we're already off to a great start.

We are partnering with WVU Energy Institute and the United States Department of Energy to drill a geothermal science well on our MIP Pad, in Morgantown, WV. This will be the first-of-its-kind geothermal study in West Virginia and will collect core samples and temperature data down to a depth of 15,000 feet, critical to testing the potential of geothermal energy in the region. Data also will be gathered on the potential for underground carbon storage in the Appalachian basin — another scientific first in the state.

We are also partnering with WVU in two separate methane emissions studies aimed at reducing emissions from natural gas production equipment. The first is a

continuation of a study started in 2022, focusing on pneumatic controllers and evaluating methane slip from compressor engines. The second will evaluate emissions from produced water storage tanks.

In 2022, we committed to using only nitrogen or compressed air as motive gases for pneumatic devices for new production facilities. In 2023, we are delivering on that commitment, while continuing to replace existing pneumatic systems.

Our 2023 drilling schedule remains full, with a plan to drill 21 new wells and turn 19 wells into production. We're expanding our water system infrastructure to enhance operational resiliency and keep water trucks off the road. We're also installing additional fuel gas pipelines to

reduce emissions during drilling and completions projects and significantly reduce our overall fuel costs.

Our Community Engagement Committee continues evaluating projects that support the stakeholders in our communities. Planned projects include stream quality monitoring with middle school students, a back-to-school bash to provide supplies for underserved primary and secondary students, another trout stocking event for Paw Paw Creek, continuing our relationship with WV DEP's Save Our Streams program, and supporting local food bank efforts – just to name a few.

We remain committed to safely producing the cleanest natural gas, protecting our environment and supporting our community stakeholders. **Here's to another great year.**