



Natural Gas Supply Chain Engagement: NGSC & NGSI

NGA 2019 Regional Market Trends Forum

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MJB & A

Introduction to M.J. Bradley & Associates

M.J. Bradley & Associates (“MJB&A”) is a multi-disciplinary team of experts with a long track record of advising industry, NGOs, and government agencies on energy and environmental policy, technology, and implementation. Our staff have backgrounds in law, engineering, finance, policy, and environmental science.



Key areas of focus and expertise:

- Power Sector
- Oil and Gas Industry
- Transportation and Electric Vehicle Technology and Policy
- Engineering and Technical Services

We help our clients:

- Evaluate the market implications of emerging laws and regulations
- Execute on strategic policy initiatives
- Manage sustainability programs
- Develop market entry strategies for emerging technologies
- Evaluate investment opportunities
- Track state, regional, and federal energy and environmental initiatives
- Engage with stakeholders and communities



Increased Stakeholder Scrutiny of Natural Gas



Smaller boroughs push back as fracking expands in Allegheny County

▲ Bill O'Toole ○ January 23, 2019 □ Current Features, Environment, Latest News



Hays Free Press News-Dispatch

Pipeline Protested: Citizens fight natural gas project

BY EXSAR ARGUELLO ON JANUARY 30, 2019

Oil & Gas industry needs to do more on climate change: investors



DAVOS MAY 18, 2018 / 7:23 AM

LONDON (Reuters) - Sixty global investors on Friday called on the oil and gas industry to do more to tackle climate change, ratcheting up pressure on company boards ahead of several high profile annual shareholder meetings.

New Study Finds U.S. Oil and Gas Methane Emissions Are 60 Percent Higher Than EPA Reports

Ramón A. Alvarez^{1,*}, Daniel Zavala-Araiza¹, David R. Lyon¹, David T. Allen², Zachary R. Barkley³, Adam R. Brandt⁴, Kenneth J. Davis³, Scott C. Herndon⁵, Daniel J. Jacob⁶, Anna Karion⁷, Eric A. Kort⁸, Brian K. Lamb⁹, Thomas Lauvaux³, Joannes D. Maasakkers⁶, Anthony J. Marchese¹⁰, Mark Omara¹, Stephen W. Pacala¹¹, Jeff Peischl^{12,13}, Allen L. Robinson¹⁴, Paul B. Shepson¹⁵, Colm Sweeney¹³, Amy Townsend-Small¹⁶, Steven C. Wofsy⁶, Steven P. Hamburg¹

Science 13 Jul 2018:
Vol. 361, Issue 6398, pp. 186-188
DOI: 10.1126/science.aar7204



SANTA FE NEW MEXICAN

Bill would freeze fracking permits during impact study

By Rebecca Moss | rmoss@sfnwmexican.com Feb 4, 2019

Supply Chain Interest in Responsible Production

NRG Energy announced a goal to reduce supply chain carbon and water intensity 25 percent by 2025. A third-party study concluded that NRG's largest impact areas per dollar of spend are related to fuels. The analysis led to a focus on addressing methane leakage in the natural gas supply chain given the growing importance of natural gas to NRG and the U.S. energy system.

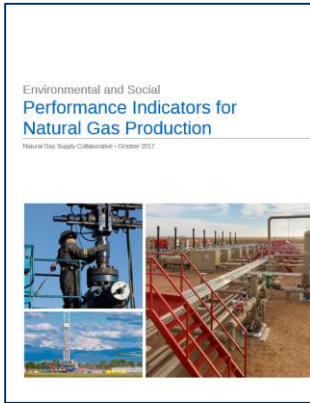
A natural gas utility is developing its own estimates of producer methane emissions rates using publicly available data and educating its gas procurement team on the performance of its suppliers.



A natural gas purchaser is developing a pilot program to demonstrate a responsible gas procurement process aimed at reducing the environmental footprint of natural gas supply.

In September 2018, the Independent Energy Standards Corporation (IES) announced the first public transaction of natural gas certified through its TrustWell™ Ratings system, which focuses on water, air, land and community impact. The transaction occurred between Southwestern Energy Company and New Jersey Natural Gas. IES has since partnered with Xpansiv, Carbon Creek Energy, and East Coast Power & Gas to provide TrustWell™ certified natural gas.

Natural Gas Supply Chain Engagement



Natural Gas Supply Collaborative (NGSC)

Voluntary forum for companies interested in promoting safe and responsible practices for the supply of natural gas.



Natural Gas Sustainability Initiative (NGSI)

Overarching voluntary framework for the natural gas supply chain to recognize and advance innovative, voluntary programs.

Natural Gas Supply Collaborative (NGSC)

Collectively, purchases of natural gas by participants for delivery or electric generation are equivalent to over 13% of U.S. marketed natural gas.



Overview

NGSC is a voluntary collaborative of natural gas purchasers promoting safe and responsible practices for natural gas supply.

Environmental and Social Performance Indicators

NGSC identified 14 key environmental and social (non-financial) performance indicators for natural gas production that reflect the perspectives of natural gas purchasers, are guided by the interests of customers and stakeholders, and highlight leading producer practices.



Additional information is available at:
<https://www.mjbradley.com/NGSC>

NGSC Drivers and Benefits

Why are companies participating in the Natural Gas Supply Collaborative?

- To promote safe and responsible practices for the supply of natural gas.
- To respond to heightened interest in environmental and social practices used in natural gas production.
- To extend existing supplier sustainability efforts to include natural gas, a primary business input for NGSC participants.
- To encourage advances in the availability and accessibility of voluntarily-reported information on environmental and social practices related to natural gas production.

As key parts of the natural gas value chain, both producers and purchasers benefit from robust voluntary reporting on natural gas production practices.

Benefits to Producers:

- Identifying opportunities to improve performance through metrics
- Directly communicating metrics related to environmental and social topics
- Building transparency and trust with stakeholders

Benefits to Purchasers:

- Increasing understanding of natural gas supply
- Addressing stakeholder questions about environmental and social topics
- Supporting corporate sustainability goals

Environmental and Social Performance Indicators for Natural Gas Production

NGSC encourages natural gas producers to provide an accessible discussion of important environmental and social issues **through company websites and voluntary reporting.**

NGSC identified environmental and social performance indicators from **existing voluntary reporting frameworks used by natural gas producers.**



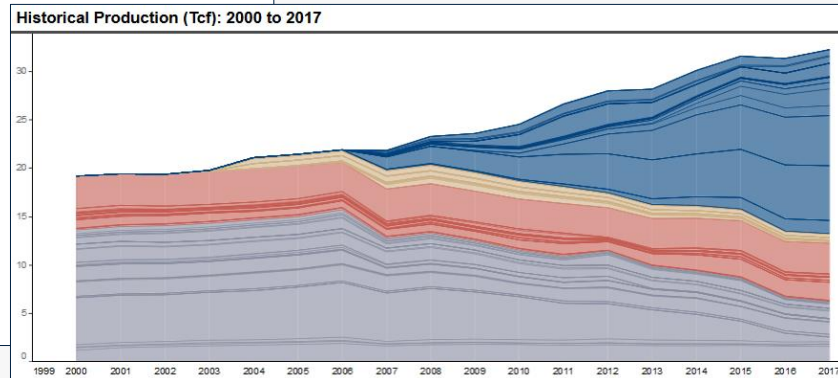
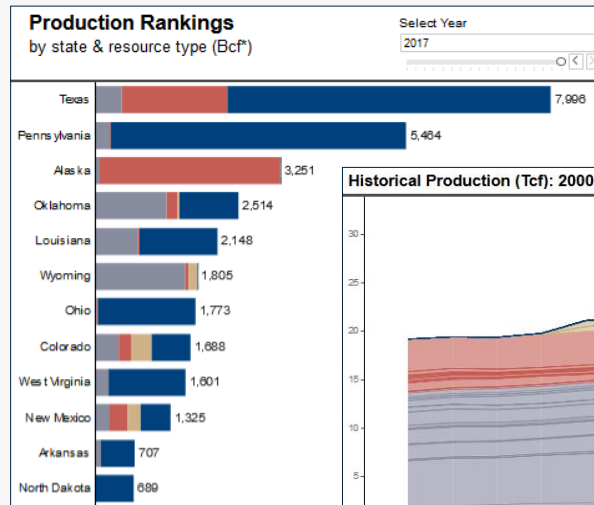
Topic Area	Environmental and Social Performance Indicators	
	Quantitative	Management Strategy
01 Methane and Air Emissions	Methane Emissions (Total and Intensity)	Overall Methane Strategy
02 Water	Water Use (Total and Freshwater Intensity) Water Testing Spill Reporting	Freshwater Use Strategy Well Planning and Integrity Strategy Wastewater Management Strategy
03 Chemical Use	Chemical Stewardship	Chemical Management Strategy
04 Community and Safety	Measuring Community Engagement Safety Incident Rates	Community Engagement Strategy Contractor Performance Strategy

NGSC Public Resources

NGSC provides resources to support stakeholder engagement and improve public understanding of producer operations, practices and level of disclosure.

Natural Gas Production Data

NGSC maintains an interactive tool summarizing publicly-available data on onshore U.S. natural gas production.



Visit www.mjbradley.com/NGSC to access the public resources.

Company	Production State(s)	Resource(s)
EQT	KY, OH, PA, VA, WV	2018 Corporate Social Responsibility Report 2017 Corporate Social Responsibility Report Sustainability Reporting website
ExxonMobil (XTO)	AR, CO, KS, LA, MT, NM, ND, OH, OK, PA, TX, UT, WV, WY	2018 Energy & Carbon Summary 2017 Sustainability Report XTO Energy ExxonMobil Corporation
Chesapeake	LA, OH, OK, PA, TX, WY	2017 Corporate Responsibility Highlights Corporate Responsibility Website
Southwestern	AR, PA, WV	Corporate Responsibility Report Appendix 2017-2018 Corporate Responsibility Website
Cabot	PA	Corporate Responsibility Website
BP	AK, CO, NM, OK, TX, WY	2017 Sustainability Report Advancing the Energy Transition Report Corporate Sustainability Website

Voluntary Public Disclosures

NGSC maintains an inventory of voluntary public disclosures by the top 40 U.S. natural gas producers on environmental and social topics.

NGSC Stakeholder Engagement

NGSC serves as a platform for participants to engage with natural gas producers and environmental groups, and other key stakeholders.

Engaging with Producers

- Engage with natural gas producers about voluntary reporting around environmental and social performance indicators
- Present and discuss NGSC at industry events and conferences

Engaging with Environmental Stakeholders

- Engage with key U.S. and Canadian environmental NGOs for feedback on NGSC and materials

Engaging with New Players in Industry

- Maintain relationships with organizations promoting responsible natural gas certification programs and data-driven tracking of attributes throughout the value chain



Natural Gas Sustainability Initiative (NGSI)

An overarching framework to **recognize and advance innovative, voluntary programs.**

The NGSI framework is initially focused on **methane emissions** and will incorporate additional environmental, social, and governance topics over time.

The development of NGSI was initiated by a CEO Natural Gas Task Force organized by the Edison Electric Institute (EEI) and the American Gas Association (AGA).



EEl and AGA ESG/Sustainability Reporting Templates

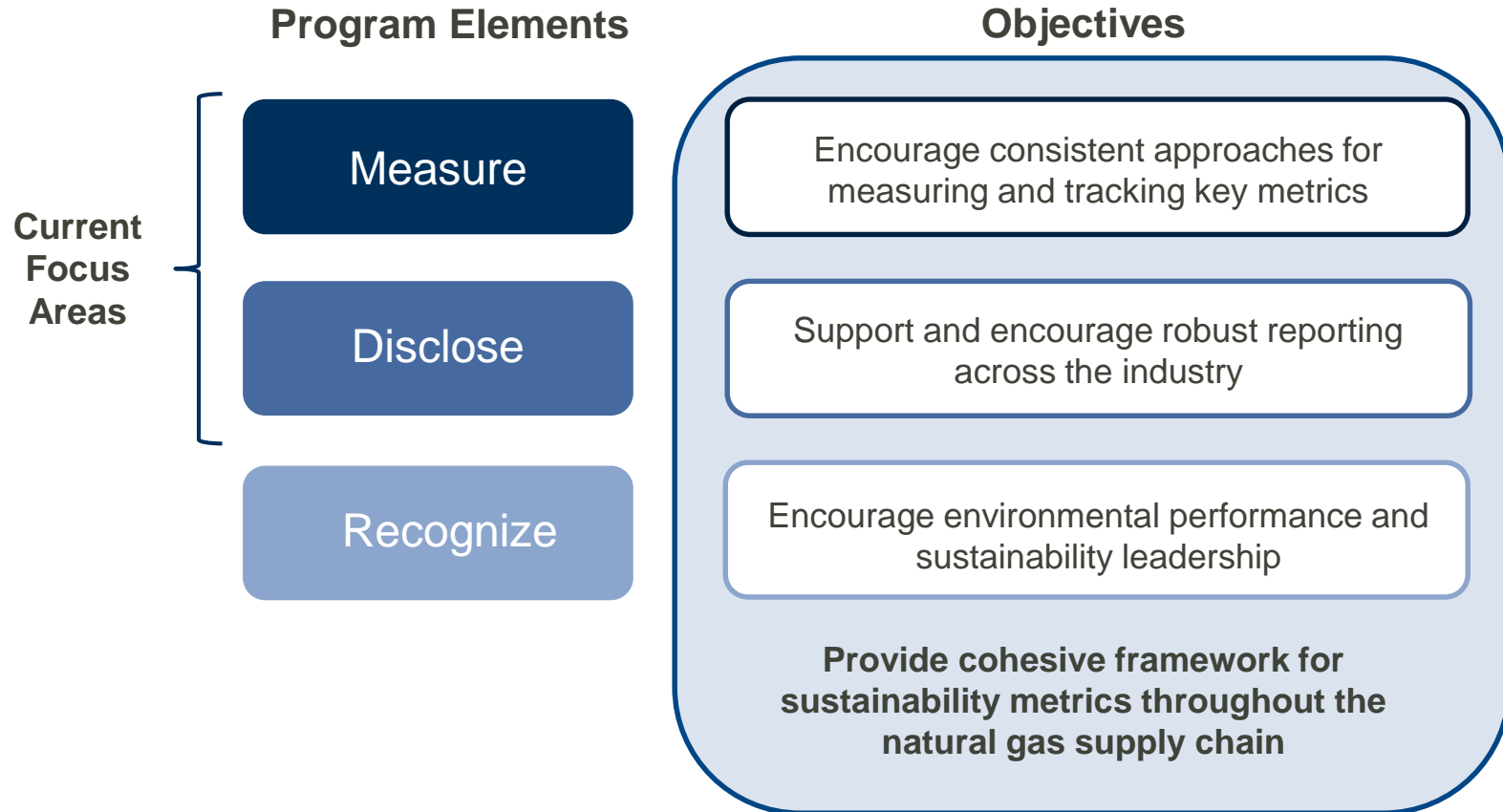
To better serve customers and investors, EEl launched an environmental, social, governance, and sustainability-related (ESG/sustainability) reporting template, with the goal of helping member electric companies provide investors with more uniformity and better consistency for ESG/sustainability metrics. AGA developed a companion template.

Voluntary ESG/Sustainability Reporting Template

Qualitative	
ESG/Sustainability Governance	Management and oversight of ESG/Sustainability, commitment to safety (AGA Pilot), methane mitigation strategy (AGA Pilot)
ESG/Sustainability Strategy	Practices, programs, and initiatives designed to support the company's transition to a lower carbon and increasingly sustainable energy future.
Quantitative	
Portfolio	An Excel-based data reporting template that is customized to include metrics on owned and/or purchased generation data by technology/resource type, as well as other metrics related to capital investments, emissions, and natural gas human resources.
Emissions	
Resources	
Natural Gas OpCo Metrics (AGA Template)	An Excel-based data reporting template that is customized to include metrics on methane emissions and reduction strategies.

The current template does not address ESG/sustainability information for the natural gas supply chain, but the AGA Template includes gas metrics.

NGSI Conceptual Design for Methane Emissions



NGSI Guiding Principles

- NGSI participants are **committed to continuous improvement** to respond to customer and stakeholder expectations for **managing environmental and social issues** along the natural gas supply chain.
- **Building on existing voluntary programs**, NGSI is a voluntary framework to **expand and accelerate industry-wide actions** and recognize the collective benefits of these actions.
- NGSI supports individual companies' voluntary efforts to manage environmental and social issues by **promoting consistent approaches** for measuring and reporting on key ESG topics and **recognizing industry leadership** across all segments.
- All NGSI participants' supplier-related decisions are at the sole discretion of the individual companies. NGSI is focused on supporting companies through **common tools and metrics** to meet environmental and social objectives and promote continuous improvement.



Current Focus on Methane Emissions Intensity

- There is limited clarity and consistency on approaches for voluntarily calculating and reporting methane emissions intensity.
- **NGSI focuses on disclosure of methane emissions intensity, at the company-level for all segments supply chain.**
- NGSI seeks to work with participants to develop a consistent and transparent approach to estimate and report total methane emissions and natural gas throughput, and to calculate methane emissions intensity at the segment level.

Why use methane emissions intensity?

Emissions intensity is a measure of methane emissions relative to some measure of output. This measurement:

- Normalizes year-to-year fluctuations
- Tracks performance over time
- Compares performance between business operations
- Benchmarks performance

Key Questions and Next Steps

Segment Definitions

- Segment boundaries for the supply chain?
- Organizational boundaries (i.e. equity share or operational control of assets)?
- Protocol for allocating emissions to the natural gas value chain?

Methane Emissions Measurement / Estimation

- Sources of data for measuring / estimating emissions from specific sources?
- Units for measuring methane emissions?

Throughput Measurement / Estimation

- Sources of data for measuring / estimating throughput?
- Units for throughput?

Next Steps

April: Feedback on the Methane Emissions Intensity White Paper

Early May: Revised Methane Emissions Intensity White Paper

May: NGS Approach to Methane Emissions Intensity Working Draft



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