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NGSC ISSUE BRIEF

Differentiated Natural Gas: A Buyer's Perspective

January 2026

About this issue brief

This issue brief outlines the perspectives of natural gas purchasers regarding differentiated natural gas. It outlines key principles and offers a forward-looking vision for improving transparency around differentiated natural gas markets in North America. This brief intends to add to the conversation of differentiated gas markets and their evolution. Members of the Natural Gas Supply Collaborative (NGSC), a voluntary collaborative of natural gas purchasers advancing the discussion around the environmental and social performance of natural gas supply, have successfully purchased differentiated natural gas to comply with regulation, meet customer demand, and reach GHG emission reduction goals; however, the market is still developing. If differentiated natural gas is to reach scale, greater alignment among market participants is required.

About the natural gas supply collaborative

The Natural Gas Supply Collaborative (NGSC) is a voluntary collaborative of natural gas purchasers advancing the discussion related to the environmental and social performance of natural gas supply. Natural gas currently plays a central role in the U.S. energy mix to meet increasing energy demand while maintaining reliability and affordability. Electric and natural gas utilities are also seeing demand for greenhouse gas quantification and carbon intensity transparency across the natural gas supply chain from customers, investors, the public, and other key stakeholders.

NGSC provides members with a platform to engage with natural gas producers and marketers, technology vendors, third-party certification frameworks, environmental organizations, and other key stakeholders around these key issues. As such, NGSC has established a leadership position in advancing market opportunities to recognize the environmental and social attributes of natural gas supply. NGSC is seeking to amplify the perspectives of large natural gas purchasers and influence the development of a differentiated gas market.

The 2025 NGSC Membership includes: Calpine Corporation, Consolidated Edison Company of New York, CPS Energy, DTE Energy, Énergir, New York Power Authority, NRG Energy, Southern Company Gas, and Vermont Gas.

Learn more about the Natural Gas Supply Collaborative here.

About ERM

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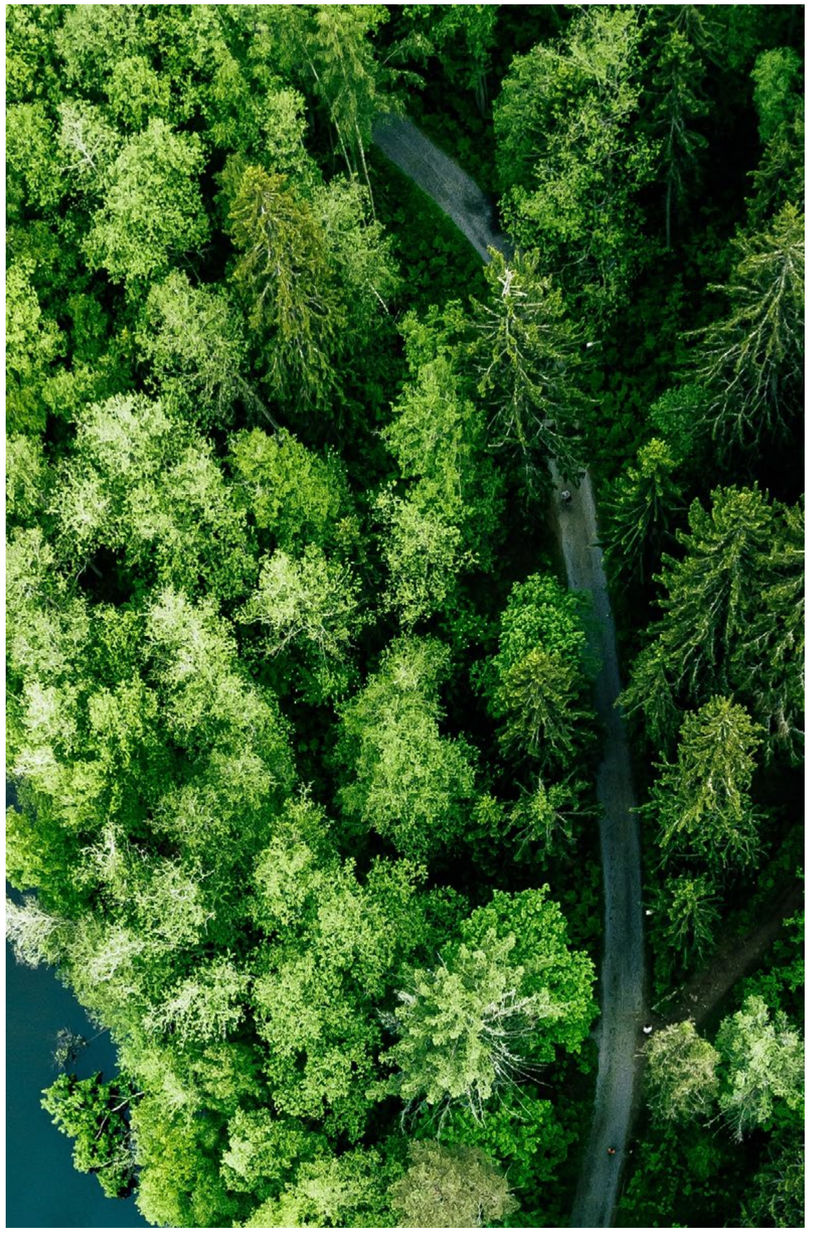
Introduction

Differentiated natural gas, also known as certified gas or responsibly sourced gas, is natural gas produced following industry best practices that may be third-party verified for metrics such as methane intensity, total greenhouse gas (GHG) emissions, and in some cases, broader Environment, Social, and Governance measures. In recent years, differentiated gas has become an appealing option for utilities, power generators, and industry alike as it often offers a lower carbon footprint than the average natural gas supply in North America. This market, which has historically focused on the production segment, has been shaped by a combination of voluntary initiatives and regulations, and has recently expanded in some cases to include the full natural gas supply chain from production to the point of delivery.

Increasingly, natural gas purchasers are requesting transparent, traceable, and comprehensive emissions data from natural gas suppliers. As a result, the indirect upstream emissions associated with the production, processing, transportation, and delivery of natural gas have become even more critical to manage and reduce as full fuel-cycle accounting grows in importance. Differentiated natural gas, with disclosed carbon intensity, offers a practical pathway to achieve emissions reductions. By prioritizing suppliers who provide differentiated natural gas, purchasers can make strategic procurement decisions that will allow them to make progress against their own emission reduction goals while supporting the momentum towards emissions transparency and sector decarbonization.

Members of the Natural Gas Supply Collaborative (NGSC), a voluntary collaborative of natural gas purchasers advancing the discussion around the environmental and social performance of natural gas supply, have successfully purchased differentiated natural gas to comply with regulation, meet customer demand, and reach GHG emission reduction goals; however, the market is still developing. If differentiated natural gas is to reach scale, greater alignment among market participants is required.

Standardized disclosure of the carbon intensity of natural gas allows purchasers to make more informed decisions when considering indirect decarbonization strategies that contribute to meeting their corporate GHG emission reduction goals.



Background

The International Energy Agency estimated that last year, 7.5 percent of global natural gas production was differentiated. Most differentiated gas volumes originate from North America, with about 27 percent of U.S. production and 18 percent of Canadian production having undergone third-party verification.[1] MiQ[2] and Equitable Origin[3] offer independent certification frameworks in North America that establish standards for assessing different segments of the natural gas supply chain.

An emerging driver for the differentiated natural gas market is the 2024 European Union (EU) Methane Regulation that requires detailed reporting on the origin of imported fuels and their emissions across the supply chain, with a particular focus on liquefied natural gas (LNG).[4] This policy has significant implications for the domestic natural gas market in North America as the U.S. is one of the largest exporters of LNG to the EU, accounting for 45 percent of the EU's LNG needs in 2024.[5]

Equitable Origin's EO100 Standard is a comprehensive certification framework for responsible energy development, built through multi-stakeholder consultation and rooted in global standards. It uniquely addresses corporate governance and Indigenous Peoples' rights, offering the broadest coverage of environmental and social metrics in the sector.

Originally focused on South America, Equitable Origin now certifies over 15 percent of leading natural gas production sites in the U.S. and Western Canada. EO100 continues to evolve through expert input and supplemental standards, supporting transparent, accountable, and socially licensed energy procurement.

MiQ is a global certification system designed to reduce methane emissions from the natural gas sector through transparent, performance-based standards.

Its Methane Emissions Performance Standard evaluates emissions intensity, mitigation practices, and monitoring across supply chain segments, while its Carbon Intensity Standard enables full well-to-gate emissions profiling.

MiQ's Supply Chain Protocol establishes comprehensive well-to-gate emissions profiles by integrating differentiated and undifferentiated data until fully audited. MiQ already certifies over 5 percent of global supply, including more than 20 percent of U.S. production.

Alongside the EU Methane Regulation and similar efforts, such as Asia's CLEAN[6] initiative that promotes transparency in the LNG supply chain, new frameworks are being developed to enhance measurement, monitoring, reporting, and verification (MMRV) for natural gas. In October 2024, the Department of Energy's Office of Fossil Energy and Carbon Management announced progress toward developing an International MMRV Framework, working collaboratively with global importers, exporters, and U.S. stakeholders to create a widely accepted approach to MMRV.[7] Although the MMRV Framework has been less active recently, its existence establishes a foundational structure that stakeholders can leverage to further develop this emerging market.

While clear market drivers exist, several barriers have contributed to stagnant market development. To date, differentiated gas has evolved as a mechanism for producers and other value chain participants to monetize verified lower-carbon fuel sources; however, these premiums may constrain market growth if utilities are unable to demonstrate that the additional costs are recoverable through regulatory mechanisms. Although public information on premiums for differentiated natural gas is limited, enough data exist to suggest a general range that purchasers might expect to pay. Historically, premiums have been less than $0.04 per million British Thermal Units; however, with the differentiated natural gas supply currently exceeding demand, premiums of less than $0.01 per million British Thermal Units have been reported.

> Some companies have procured differentiated natural gas without incurring a price premium. Meanwhile, certain utilities are authorized to recover incremental costs through regulatory mechanisms such as the Tennessee Natural Gas Innovation Act.

Regulatory and educational barriers also continue to hinder the growth of the differentiated natural gas market. Utilities often cannot justify the added cost of differentiated gas without regulatory approval to recover the incremental expenses. For example, the Colorado Public Utilities Commission rejected Xcel Energy's proposal to include differentiated gas in its Clean Heat Plan due to uncertainty about its emissions benefits, though Xcel has still committed to procuring 100 percent differentiated gas by 2030. [8] Inconsistent regulatory treatment across states further compounds market uncertainty. In New York, differentiated gas sourced from outside of the state's boundaries is not recognized for compliance with emissions mandates, limiting both market scale and participation.

Many regulators, policymakers, and consumers have limited understanding of how differentiated gas is verified, what environmental value it provides, and how it fits into broader decarbonization strategies. Building confidence in the credibility and role of differentiated gas will be critical to fostering demand, securing policy support, and guiding the market's evolution as stakeholders begin to align around shared principles for reducing emissions and advancing sustainability goals.

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Core Principles for Natural Gas Procurement

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Core principles for natural gas procurement

NGSC companies have defined five core principles to guide natural gas procurement and reduce carbon intensity across the supply chain. While frameworks, standards, and protocols for natural gas differentiation provide important structure and credibility, NGSC members place greater emphasis on adherence to these principles than on alignment with any single certification or standard.

These core principles include:

1

Comprehensive GHG emissions coverage

2

Comprehensive supply chain coverage

3

Transparency

4

Alignment with leading GHG accounting protocols and standards

5

Third-party verification

Comprehensive GHG emissions coverage

At its inception, differentiated natural gas was aimed at verifying the methane intensity (i.e., the measure of methane emissions relative to natural gas throughput) of natural gas production. Methane abatement has historically been of primary focus for the oil and gas sector because its global warming potential is 81.29 times greater than carbon dioxide (over a 20-year period) and around 29.810 times that of carbon dioxide over a 100-year period. Methane reduction remains essential and continues to be a key focus for natural gas purchasers; however, stakeholders are increasingly acknowledging the opportunity to broaden their scope and address GHG emissions across the full natural gas supply chain. Many stakeholders are evaluating total carbon intensity in the way of carbon dioxide equivalent, which not only captures methane, but other GHG emissions such as carbon dioxide and nitrous oxide. Having a standardized metric allows for more meaningful and transparent communication of climate targets, emissions reductions, and peer benchmarking.

Comprehensive supply chain coverage

Differentiated natural gas has historically focused on the production segment due to its relatively high emissions intensity. Now, to capture a holistic emissions profile of the entire supply chain, some purchasers are looking to include additional other segments. Expanding to cover the full supply chain presents significant challenges and opportunities. The natural gas supply chain is highly segmented, with the potential for separate entities to be responsible for production, gathering and boosting, processing, transmission and storage, and distribution. This segmentation makes it difficult to consistently track and quantify carbon intensity for natural gas pathways. Stakeholders are exploring ways to produce a holistic carbon intensity value using measured data or publicly available data sets, such as the U.S. Environmental Protection Agency's Greenhouse Gas Reporting Program Subpart W regulations for Petroleum and Natural Gas Systems. Voluntary efforts like GTI Energy's Veritas[11], have attempted to take a step towards full supply chain coverage by developing protocols for measuring and verifying emissions for each segment of the supply chain.

Stakeholders across the supply chain are working to develop a standardized MMRV framework. Although no industry-wide standard has been widely adopted, stakeholders may work together to leverage existing frameworks that have been developed for other applications, such as LNG.[12] [13,14]

These developments highlight the growing recognition that a complete, standardized approach to supply chain emissions is essential to meeting regulatory requirements and to meet the market demand for accurate, differentiated, and comparable data across natural gas pathways.

LNG Frameworks

Statement of Greenhouse Gas Emissions (SGE) Methodology

The SGE Methodology has been developed by a team of technical specialists representing Chevron, QatarEnergy, and Pavilion Energy, supported by ERM. The methodology provides a consistent approach to calculating GHG emissions throughout the LNG supply chain.

GIIGNL Framework

The International Group of LNG Importers (GIIGNL) launched a framework to provide the industry with a consistent approach to assess the GHG footprint of LNG cargoes at any stage of the LNG life cycle, as well as a consistent approach for the declaration of GHG neutral LNG cargoes.

MiQ's CIRIS Tool

MiQ's CIRIS Tool was developed to help companies comply with the EU Methane Regulation by enabling the transfer of methane and carbon MRV environmental attribute certificates between geographic regions.

Alignment with leading GHG accounting protocols and standards

Stakeholders are advocating for certification of differentiated natural gas to be aligned with existing and trusted monitoring and reporting frameworks. Many protocols, frameworks, and standards target the oil and gas sector, while others are sector-agnostic and can be applied across industries. Some provide methodologies, protocols, and infrastructure that enable accurate and verifiable emissions reporting across the oil and gas supply chain. Examples include the following:

- **GTI Veritas**[15] provides standardized protocols for methane emissions detection, quantification, and reconciliation, supporting robust reporting through empirical measurement and technology validation. The Veritas protocols are widely recognized for translating new measurement technologies into standardized, comparable reporting frameworks, helping operators create consistent data across assets.
- **Oil & Gas Methane Partnership (OGMP) 2.0**[16] provides guidance on integrating top-down and bottom-up direct methane measurement reporting and emissions through five different levels of measurement stringency (Level 1-Level 5). Level 5 includes requirements for all sources of methane emissions and requires direct measurement at both the source and site level, including the methane emissions from vented, fugitive, and incomplete combustion emissions.
- **GHG Protocol**[17] serves as the foundational framework for corporate greenhouse gas accounting, to ensure consistency and comparability in emissions reporting. It provides widely adopted guidance for Scope 1, 2, and 3 accounting, ensuring that methane data can be integrated into corporate inventories in a way that is consistent with international climate disclosure standards such as CDP and the Science Based Targets initiative (SBTi).

- **Clean Resource Innovation Network**[18] **and Carbon Registry Standards**[19] support transparency and traceability of emissions data, reinforcing efforts to reconcile bottom-up and site-level measurements. These initiatives establish infrastructure for validating data quality, preventing double-counting, and ensuring that emissions reductions or intensity improvements are properly registered and disclosed in line with recognized carbon accounting protocols.
- **Together for Sustainability**[20] **and PACT**[21] emphasize supply chain emissions transparency and harmonization, through upstream/downstream accountability and data interoperability. These efforts are particularly important for Scope 3 disclosure, helping companies reconcile supplier-level methane data with corporate reporting obligations and ensuring that emissions are consistently represented across global value chains.

Other frameworks have emerged to support upstream Scope 3 reduction targets and product carbon foot printing efforts. The increasingly common use of carbon and methane intensity metrics has created a need for a standardized calculation methodology. One example is the work that The Natural Gas Sustainability Initiative[22] (NGSI) has done to standardize the methane intensity calculation methodology.

NGSI is a voluntary framework intended to enhance transparency, improve data quality, and support industry efforts to identify and reduce methane emissions, complementing rather than replacing regulatory requirements. NGSI was established in 2018 by the Edison Electric Institute and the American Gas Association, with facilitation support from MJ Bradley & Associates. The initiative aims to provide a consistent, transparent, and comparable method for calculating methane emissions intensity across the natural gas supply chain. NGSI's Methane Emissions Intensity Protocol Version 1.0 was released in 2021, and Version 2.0 was published in September 2024. The updated version incorporates revised emission factors and includes a protocol overview and five data reporting templates that allow companies to calculate and disclose methane emissions intensity in a standardized format.

Transparency in the differentiated gas market

Transparency in the differentiated natural gas market is essential to ensure the credibility of climate claims, enable buyers to verify environmental performance, and build trust in differentiated gas as a legitimate tool for reducing supply chain emissions. Environmental attribute certificates (EAC) are instruments that convey the environmental or sustainability characteristics of a given activity or commodity.[23] There are two common mechanisms for making claims about EACs in the market today: book-and-claim and trace-and-claim.[24] Both of these mechanisms offer credibility, transparency, and tracking of claims throughout the market. The graphic below demonstrates a high-level overview of some of these market mechanisms.

Registering EACs enhances supply chain transparency and establishes clear ownership of differentiated natural gas purchases. Registries provide an auditable trail to ensure proper certificate retirement and to prevent double-counting, reinforcing system integrity and public trust. As registries evolve, early adoption can further strengthen data visibility across the supply chain. Stakeholders also emphasize the importance of reporting detailed production data and company-wide emissions intensity to avoid selective disclosure.

Key registries and purchasing platforms currently supporting differentiated gas include:

- **CG Hub**—Designed in association with MiQ, CG Hub offers transparent trading of differentiated natural gas through a centralized market.[25]
- **MiQ Registry**—The ledger where all MiQ certificates are held throughout their lifecycle, ensuring authenticity and avoiding double-counting of any reductions or certificates.[26]
- **Xpansiv**—The largest integrated and open market infrastructure with a comprehensive end-to-end technology platform that covers the entire lifecycle of environmental commodities.[27]
- **EarnDLT**—A platform that connects siloed commodities to enable environmental attributes data to be measured, recorded, verified, and traded.[28]

Additionally, Context Labs has developed software to create digital attributes representing volumes of gas and associated emissions performance. This software also allows for the tracking and retirement of attributes, providing direct measurement throughout the supply chain. To date, companies like Williams have leveraged the software's breadth across the supply chain, to support with their Next Gen gas offering.[29]

Third-party verification

Third-party verification of emissions data is valuable for supporting a reliable and objective evaluation of the natural gas supply chain. Independent verification organizations promote public trust in emissions reporting and enable regulators, companies, and consumers to make informed decisions based on credible, standardized data. Verified certification of purchased natural gas also allows customers to demonstrate progress toward climate goals and gain recognition for exceeding industry standards.

One framework supporting third-party verification is ISO 14067,[30] established by the International Organization for Standardization (ISO) in 2018. ISO 14067 defines the principles, requirements, and methodologies for quantifying and reporting a product's carbon footprint across its life cycle. By adhering to this standard, companies can have their emissions calculations independently verified to confirm data quality, methodological consistency, and transparency. Verification against ISO 14067 provides assurance that reported carbon intensity values are accurate, comparable, and aligned with global best practices, strengthening confidence in the integrity of differentiated natural gas markets.

Conclusion

Differentiated natural gas is increasingly emerging as a credible and practical solution for purchasers seeking to reduce emissions, meet climate goals, and respond to growing stakeholder demands for transparency. By integrating comprehensive GHG coverage, full supply chain alignment, standardized accounting protocols, transparency through environmental attribute certificates, and third-party verification, differentiated gas enables buyers to make informed, data-driven decisions.

These principles strengthen traceability, credibility, and market integrity, positioning purchasers to demonstrate climate leadership while supporting the broader transition to low-carbon energy. As certification frameworks and data verification systems mature, the differentiated gas market can scale to include additional products such as natural gas liquids and sectors like chemicals and agriculture, which rely on hydrocarbon-based feedstocks. Realizing this potential will depend on continued regulatory alignment, stakeholder education, and cross-sector collaboration to ensure that differentiated natural gas serves as a reliable bridge between today's energy systems and a lower-carbon future.

Endnotes

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2 MiQ, “The MiQ Standard.”

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5 European Commission, Liquefied Natural Gas

6 CLEAN Initiative, Statement to Accelerate Reduction of Liquefied Natural Gas (LNG) Supply Chain Emissions

7 DOE, Greenhouse Gas Supply Chain Emissions Measurement, Monitoring, Reporting, Verification Framework

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9 Forster et al, IPCC Sixth Assessment Report, Table 7.SM.7

10 IPCC, Global Warming Potential Values

11 GTI Energy, “Veritas Protocols”

12 Chevron, QatarEnergy, Pavilion Energy, SGE Methodology

13 GIIGNL, Framework

14 MiQ, CIRIS Tool

15 GTI Energy, About Veritas

16 OGMP, The Oil & Gas Methan Partnership 2.0

17 GHG Protocol, Standards

18 CRIN, About CRIN

19 ACR, The ACR Standard

20 TFS, Publications

21 PACT, About us

22 EEI, Natural Gas Sustainability Initiative

23 Science Based Targets Initiative, Draft Corporate Net-Zero Standard V2 Explained: Environmental Attribute Certificates

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25 Trumarx, CG Hub

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27 Xpansiv, About Xpansiv

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