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Key Elements for Valuing Environmental and Social Attributes in Natural Gas Markets

Executive Summary

Purchasers of natural gas are driving sustainability practices in their natural gas supply chains. These efforts include collaborating with natural gas producers to gather information on environmental and social practices and performance and leveraging this information to inform natural gas supply decisions. Consistent with this focus, many natural gas producers are expanding voluntary reporting on environmental and social topics and adopting innovative technologies and practices to minimize environmental impacts. Some producers are also pursuing third-party certification of practices to further improve operations and bolster information available to purchasers and other stakeholders. These efforts have led to the development of a nascent but growing market for natural gas differentiated by the environmental and social practices of natural gas producers.

The Natural Gas Supply Collaborative (NGSC), a group of natural gas purchasers representing approximately 20 percent of U.S. marketed natural gas, seeks to help expand and accelerate these positive steps to support the development of tools that can be used in natural gas markets to recognize environmental and social attributes.

This working paper is intended to provide an overview of the differentiated natural gas market for diverse stakeholders, including companies throughout the natural gas value chain, state regulators and policy makers, natural gas marketers, natural gas consumers, and investors. NGSC will continue to engage with these and other stakeholders to support the growth of a differentiated gas market and welcomes continued feedback on this document as the differentiated gas market evolves.

NGSC has identified four key elements to support the development of a differentiated natural gas market:

- **Environmental and social performance indicators.** An essential step in recognizing environmental and social attributes of natural gas is establishing criteria that can be used to identify responsible practices and measure performance. As part of this working paper, NGSC updated previously identified environmental and social performance indicators. A key area of interest is greenhouse gas (GHG) emissions performance. NGSC has updated the quantitative indicator for methane emissions to incorporate Version 1.0 of the *Natural Gas Sustainability Initiative Methane Emissions Intensity Protocol* and added a quantitative indicator for GHG emissions, including both absolute and intensity metrics.
- **Voluntary disclosure.** Voluntary disclosure of non-financial strategy and performance is a fundamental component of a differentiated natural gas market. Publicly disclosed data allow natural gas purchasers to evaluate potential suppliers and identify those that meet specific environmental and social disclosure criteria or levels of performance. Producers and purchasers can use voluntary disclosures today to support the development of a differentiated gas market by using disclosures to inform supply decisions.
- **Verification processes**. A key aspect of a natural gas transaction with specified attributes is verification that the supplier has met established criteria. Verification could come in the form of certification by an independent third-party, self-certification by a company, or participation in an industry coalition. Third-party certification provides the most rigorous level of verification. Additionally, advancements in methane detection and quantification technologies allow producers to demonstrate implementation of best

practices to reduce methane emissions and play an important role in validating methane emissions performance.

- **Mechanisms for tracking natural gas attributes.** Lack of transparency throughout the natural gas supply chain is a key challenge to integrating environmental and social performance into natural gas supply decisions. The structure of the natural gas market makes upstream transparency particularly difficult. Natural gas marketers and gas purchasers have limited information about the environmental and social practices associated with the companies who produce the natural gas that is delivered to customers. NGSC seeks to collaborate with industry partners to expand the availability of information about natural gas supply.

Key Elements for Valuing Environmental and Social Attributes in Natural Gas Markets

1. Introduction

Natural gas plays a critical role in the current U.S. energy mix, meeting 32 percent of U.S. energy needs in 2019.[1] The abundant domestic resource has provided significant economic and environmental benefits to customers across the U.S. economy including the electric power, residential, commercial, and industrial sectors. In many parts of the country, natural gas has helped enable a transition to a lower-carbon energy supply. The rise in U.S. natural gas production has also coincided with more stakeholders focusing on the environmental impacts of production. Operating at the intersection of the natural gas supply chain and end-use customers, NGSC participants are increasingly being asked to address sustainability questions concerning natural gas production.

The Natural Gas Supply Collaborative (NGSC)

NGSC is a voluntary collaborative of natural gas purchasers advancing the national discussion related to voluntary reporting on the environmental and social performance of natural gas production. NGSC includes 16 companies that purchase approximately 6.5 trillion cubic feet of gas annually, equivalent to 20 percent of U.S. marketed natural gas. Participating gas utilities distribute enough natural gas to meet the average needs of more than 60 million U.S. households and, as part of a portfolio of resources, participating companies produce enough electricity from natural gas to power, on average, over 29 million households.

In 2017, NGSC published a set of voluntary non-financial performance indicators associated with natural gas production addressing key areas of customer and investor interest related to methane and air emissions, water, chemical use, community impacts, and workforce safety. These performance indicators were updated in 2021 to provide more granular and actionable metrics. Broader information sharing supports a virtuous cycle where companies highlight their approaches to managing natural gas development, companies and stakeholders benefit from having more information on leading practices, and stakeholders and the public gain greater insights into how companies are protecting the environment and local communities.

NGSC members make their own business decisions related to the procurement of natural gas, and in many cases are subject to oversight by regulators who establish procurement requirements. NGSC and all its activities are subject to compliance with all federal and state antitrust laws. Participants in the collaborative do not discuss any company-specific pricing, natural gas supply terms and conditions, discounts, or information that may affect prices, allocations of markets, specific supplier experiences, or any other competitively sensitive information.

M.J. Bradley & Associates (MJB&A), an ERM Group Company, convenes and manages NGSC and handles the development and release of all NGSC products.

Learn more about NGSC at http://www.mjbradley.com/NGSC.

Reports by investor and environmental advocates highlight a clear and continued interest in understanding methane emissions from the oil and gas supply chain. In October 2018, Ceres, EDF, and PRI published *Setting the*

[1] More information on U.S. primary energy consumption by energy source available at: https://www.eia.gov/energyexplained/us-energy-facts/#:~:text=In%202019%2C%20total%20U.S.%20primary,or%20about%20100.2%20quadrillion%20Btu.

Bar: Implementing the TCFD Recommendations for Oil and Gas Methane Disclosure.[2] In that report, the three organizations state that "[m]ethane emissions present material risks and opportunities to the oil and gas industry requiring robust disclosure." Highlighting the oil and gas industry as one of the largest sources of anthropogenic methane emissions, the report discusses the risk of production-related methane emissions to companies further down the supply chain, such as NGSC participants.

In response to investor inquiries, NGSC participants have expanded their own corporate disclosures over the past several years. Many NGSC participants use the environment, social, and governance (ESG) / Sustainability Template developed by Edison Electric Institute (EEI) and the American Gas Association (AGA) as a guide to consistently disclose quantitative and qualitative ESG metrics.[3] Through engagement in the development of the ESG / Sustainability Template, EEI and AGA recognized investor interest in the natural gas supply chain and launched the Natural Gas Sustainability Initiative (NGSI).[4] Recognizing the opportunity to collaborate with partners throughout the natural gas supply chain, NGSC has actively supported and engaged with NGSI through the development of its methane emissions intensity protocol.

The combined interests of customers, investors, and regulators reinforce the business drivers for NGSC to request increased disclosure of information related to the management of environmental and social topics in the natural gas supply chain. These drivers further support moving beyond disclosure toward the incorporation of environmental and social attributes into natural gas markets. Developing consistent approaches to incorporating these attributes will benefit both producers and suppliers who are seeking to define a differentiated gas market based on environmental and social attributes.

NGSC has engaged with natural gas producers and marketers, investors, and environmental organizations to support expanded natural gas producer voluntary disclosure of environmental and social practices and performance. Building on the lessons learned from those engagements, NGSC is working to better define key elements of an emerging market that recognizes the environmental and social attributes of natural gas. By developing transparent criteria for these elements based on broad stakeholder input, NGSC seeks to support sustainability efforts by companies operating throughout the natural gas supply chain.

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[2] Ceres, EDF, PRI. "Setting the Bar: Implementing the TCFD Recommendations for Oil and Gas Methane Disclosure", October 2018. Available at: https://www.edf.org/sites/default/files/documents/setting-the-bar.pdf

[3] Company disclosures are available through the EEI ESG / Sustainability website at: https://www.eei.org/issuesandpolicy/Pages/FinanceAndTax-ESG.aspx

[4] The NGSI Methane Emissions Intensity Protocol is available at: https://www.eei.org/ngsi

2. Environmental and Social Performance Indicators

NGSC published environmental and social performance indicators for natural gas production in 2017 to support safe and responsible practices for natural gas supply and encourage natural gas producers to voluntarily disclose non-financial information responsive to stakeholder interest.[5] Voluntary disclosures responsive to the environmental and social performance indicators improve supply chain visibility and allow purchasers and other stakeholders to better understand the policies and practices of natural gas producers. These non-financial performance indicators enable companies to identify specific attributes or performance criteria for gas supply that could be provided by natural gas markets.

Key Takeaways

- NGSC has updated its environmental and social performance indicators in 2021 to highlight key areas of interest related to natural gas production. The updated non-financial performance indicators are detailed in the Appendix.
- Methane emissions from the natural gas supply chain are a priority topic for NGSC participants. As part of this update, NGSC is adopting the NGSI Methane Emissions Intensity Protocol.
- The environmental and social performance indicators highlight transparent and measurable indicators that could be referenced by market participants in the development of a market and can be used by individual companies to specify performance criteria.
- Additional standardized quantitative metrics are needed for key environmental and social topic areas, such as water use and community engagement.

The NGSC identified the environmental and social performance indicators through extensive engagement with and feedback from natural gas producers, environmental organizations, investor groups, and research groups. For the past four years, NGSC has compared the voluntary non-financial disclosures of the largest natural gas producers by volume in the U.S. against the NGSC-identified environmental and social performance indicators. These internal analyses have shown year-over-year disclosure improvements, with both an increasing number of producers reporting information responsive to the indicators and reporting that includes more granular information and details.

NGSC's review of producer environmental and social disclosure and NGSC's continued engagement with environmental organizations and natural gas producers have provided insights into voluntary reporting strengths and areas for improvement as well as evolving areas of stakeholder interest. While all the NGSC environmental and social performance indicator topic areas remain important to natural gas purchasers and other stakeholders, methane emissions are a priority issue. The focus on methane is reflected by producer actions, including implementation of methane emission mitigation strategies, increased voluntary disclosure and goal setting, and growth in voluntary programs such as the ONE Future Initiative and the Environmental Partnership.

Recognizing stakeholder priorities and rising interest in a market for recognizing non-financial attributes of natural gas, NGSC has worked this year to update its environmental and social performance indicators. The goal of these revisions is to advance NGSC's environmental and social performance indicators so that they provide

[5] M.J. Bradley & Associates. *NGSC Environmental and Social Performance Indicators*, (October 2017). https://mjbradley.com/sites/default/files/NGSCIndicatorsFinal.pdf

more actionable metrics for individual company strategic decisions about natural gas purchases. The more specific non-financial environmental and social disclosure requests support more uniform reporting in terms of both content and methodologies and will facilitate comparisons across natural gas producers. Making the NGSC performance indicators more specific strengthens the criteria against which producer performance can be evaluated, allowing purchasers to better integrate producer operational performance into their supply decisions. Changes to the quantitative and management strategy indicators are summarized below; the full list of NGSC performance indicators revisions are provided in the Appendix.

The development of additional standardized quantitative metrics will allow natural gas purchasers and other stakeholders to directly compare producer performance on other important environmental and social topics. Defining consistent methodologies for specific criteria is necessary to drive uniform reporting and differentiate gas production. For example, producers currently use a wide range of approaches to calculate freshwater use intensity. These include different standards for defining freshwater and different units in the numerator and denominator of the intensity equation. This inconsistency makes it difficult to discern leading performance. The widespread adoption and disclosure of standardized quantitative metrics will support the growth of a differentiated natural gas market by enabling purchasers to base supply decisions on an expanding list of criteria. Similarly, it provides natural gas producers with new opportunities to demonstrate leading performance.

Quantitative Environmental and Social Performance Indicator Updates

Five changes are being made to the quantitative environmental and social performance indicators:

- The quantitative indicator for methane is being updated to request information publicly reported under the NGSI methane intensity protocol (see text box). This includes methane intensity and the associated information used to calculate methane emissions intensity, including absolute emissions. Many companies currently report intensity but use different equations and definitions, prohibiting meaningful comparisons across reported data. NGSI's standardized methodology will allow direct comparison of intensities reported by different producers.
- NGSC is adding a quantitative performance indicator related to GHG emissions intensity. Similar to the original methane quantitative performance indicator, it requests data on total GHG emissions, GHG emission intensity, regional breakdowns of emissions and intensity (if applicable), and the methodology used to estimate emissions. The GHG intensity metric is designated in a specific unit to encourage uniform reporting and allow for direct comparison of producer performance. Adding a total GHG indicator reflects rising stakeholder concern over carbon dioxide emissions from the industry, particularly from oil-heavy basins with high flaring rates. Analyzing GHG emissions and intensity allows stakeholders to evaluate the total climate impact of natural gas producer operations.
- A third quantitative performance indicator update revises the safety incident metric to specifically request reporting of total recordable incident rate (TRIR) and lost time incident rate (LTIR). Replacing the original indicator's general language on injury rates with these well-defined and commonly used metrics supports uniform reporting across the industry and allows for meaningful comparison of natural gas producer safety performance.
- Finally, NGSC is removing the quantitative non-financial performance indicators for chemical use and community engagement. There are no standardized industry metrics for these topics areas, and, based on NGSC's reviews, they are the least reported environmental and social indicators. Further, there is overlap between the quantitative and management strategy indicators for both topic areas. Disclosures responsive

to the updated management strategy indicators will provide stakeholders with insight on producer performance in both topic areas.

NGSC will continue to engage on these topic areas, emphasizing the importance of well-defined, consistent quantitative metrics (e.g., NGSI Methane Emissions Intensity, TRIR) for enhancing transparency, improving stakeholder understanding, and evaluating company performance across the industry.

Natural Gas Sustainability Initiative (NGSI) Methane Emissions Intensity Protocol

NGSI is a voluntary, industry-led initiative to advance efforts to address environmental, social, and governance issues throughout the natural gas supply chain. NGSI recognizes the critical role of natural gas across the economy and responds to the rising importance of environmental and social goals for customers, as well as the increasing application of ESG metrics by institutional investors, banks, and ratings agencies.

Launched by a CEO task force on natural gas issues convened by EEI and AGA, NGSI is working to advance a voluntary, industry-wide approach for companies to report methane emissions intensity by the segments of the natural gas supply chain in which they operate. NGSI is a voluntary initiative and is intended to bolster and complement methane management efforts, including methane regulatory standards and direct methane measurement strategies, all of which are important elements for reducing emissions and providing certainty to both the regulated industry and its customers in the supply chain.

Methane emissions intensity is a measure of methane emissions relative to natural gas throughput. Investors, customers, environmental groups and other stakeholders are increasingly requesting information on natural gas company performance based on methane emissions intensity. While intensity is becoming a preferred approach for communicating methane emissions data throughout the industry, there is no standard methodology for calculating it. This is an obstacle to managing, tracking, and more transparently communicating current voluntary efforts to reduce methane emissions.

The NGSI protocol establishes intensity metrics for specific segments of the supply chain because this structure provides the most comparable points of reference between companies, while being responsive to those asking for such a metric. Using the NGSI protocol, companies will calculate and report methane emissions intensity based on total corporate methane emissions attributable to the natural gas supply chain and methane associated with natural gas throughput for each segment in which they operate. The methane emissions intensity metric is expressed as a percent of segment methane throughput.

NGSI Segments	NGSI Metric
• **Onshore Production*** • **Gathering and Boosting** • **Processing** • **Transmission and Storage** • **Distribution**	$\frac{Methane\ Emissions\ Associated\ with\ Gas}{Segment\ Methane\ Throughput}$

*NGSC is currently focused on the natural gas production segment. Under NGSI, companies operating in multiple segments of the gas supply chain are encouraged to report methane emissions and methane emissions intensity for all of the segments in which they operate.

Management Strategy Environmental and Social Performance Indicator Updates

The NGSC environmental and social management strategy performance indicators are being updated to include specific disclosure elements. The original non-financial performance indicators were intentionally broad to encourage reporting on the full scope of company policies and practices. However, NGSC's review of voluntary producer non-financial disclosures has indicated that while companies may disclose information relevant to a management strategy indicator, critical aspects needed to fully understand producer approaches are not consistently reported.

Additionally, while the lack of specificity in the indicators encouraged reporting on a broad range of strategies, it also meant that general disclosures could be considered responsive to the indicators. Using information from the review of producer voluntary disclosures and continued stakeholder engagement on the key elements of each environmental and social topic area, NGSC added detailed disclosure elements to each management strategy indicator. NGSC intends to highlight key policies and practices, encourage more uniform reporting, and better facilitate stakeholder understanding of producer practices with the addition of these specific environmental and social management strategy performance indicators. The detailed reporting elements for each indicator are listed in the Appendix.

3. Voluntary Disclosure

Voluntary disclosure of ESG strategy and performance is a fundamental component of a differentiated natural gas market. Publicly disclosed data allow natural gas purchasers to evaluate potential suppliers and identify those that meet specific disclosure criteria or levels of performance (e.g., methane intensity). For example, a gas utility serving customers in an area with active natural gas production may be interested in partnering with producers that disclose information about measures to minimize local community impacts, among other criteria. While natural gas producers work to minimize community impacts, companies that publicly disclose their policies and practices could be more attractive as a source of natural gas.

Key Takeaways

- Voluntary reporting provides an opportunity for companies throughout the natural gas industry to directly communicate with the public and educate stakeholders about corporate priorities and sustainability practices.
- Voluntary disclosure of environmental and social metrics can serve as a first step for entry into differentiated gas markets for both producers and purchasers not yet prepared for verification processes.

Voluntary disclosures offer a straightforward introduction to differentiated gas markets for producers and purchasers of natural gas. From the producer perspective, disclosures do not require a company to modify its practices or meet standards, but can create an incentive to voluntarily do so based on transparency and market forces. There is also little risk associated with disclosure; many stakeholders prefer reporting of potentially unflattering performance over no disclosure at all. For companies not yet prepared to meet a set of voluntary performance standards, voluntary reporting provides an initial opportunity to highlight leading practices and performance. Companies should also consider explaining reporting gaps or plans to report on additional information in the future.

Requesting voluntary disclosure on key environmental and social topics is an easy first step for natural gas purchasers exploring the possibility of using ESG criteria in supply decisions. It signals to producers which criteria are important to buyers, which could drive additional reporting and improvements in performance. It also gives purchasers a better sense of the current ESG performance of potential suppliers should they make ESG metrics a key factor in the procurement process and provides useful data and information to educate policy makers and other stakeholders on the value of integrating ESG metrics into the procurement process. Many leading producers already have robust voluntary ESG disclosures and a growing number of purchasers are requesting potential suppliers to provide specific information. A continuation of these trends is important to the initial development of gas markets that recognize ESG attributes. As the differentiated gas market grows and matures, voluntary reporting will continue to play an important role but may increasingly be supplemental to the certification processes that purchasers may increasingly demand to verify gas meets specific criteria.

Voluntary disclosures are already being used by natural gas purchasers to inform their supply decisions. In early 2020, Énergir, the largest natural gas distributor in Québec and a NGSC participant, completed a transaction with Seven Generations Energy to purchase certified natural gas. The certification was developed by Equitable Origin and included voluntary disclosure of several metrics identified by Énergir in collaboration with local stakeholders (see text box below). Other NGSC participants have requested that potential suppliers voluntarily provide information responsive to the NGSC indicators in their supply bids. This information can be used by purchasers to differentiate otherwise equivalent bids.

Énergir Responsible Procurement of Natural Gas

In February 2020, Énergir, the largest natural gas distributor in Québec, announced an agreement with Seven Generations Energy Ltd. as part of Énergir's "Initiative for Responsible Procurement of Natural Gas." The Initiative reflects a successful stakeholder engagement process that demonstrates the increasing role that supplier environmental, social, and governance (ESG) performance and disclosure is playing in natural gas purchaser decisions.

The transaction was the first to be governed by the Equitable Origin EO100™ Standard for Responsible Energy Development and included the disclosure of key indicators. The key indicators align with existing ESG performance indicator frameworks, such as the environmental and social performance indicators published by NGSC.

Énergir indicated that for the 2019-2020 rate-year it purchased approximately 20 percent of its natural gas through this initiative. In Énergir's 2020 Climate Resiliency Report, Énergir announced a target to procure 100 percent of fossil natural gas supplies as part of the Responsible Procurement of Natural Gas Initiative by 2030.[6]

In addition to providing the foundation for a differentiated gas market, voluntary disclosure of environmental and social practices and performance facilitates engagement with investors and other important stakeholders. As discussed above, NGSC's review of public non-financial disclosures has identified that producers' disclosures are covering an expanded range of topic areas and including increasing granular information. The number of producers voluntary reporting information has increased as well, with many independent producers publishing inaugural sustainability reports within the last several years. Increasing quantity and quality of environmental and social disclosures supports the development of a differentiated gas market. Moving forward, NGSC will continue to engage with natural gas producers and other industry stakeholders to encourage robust and actionable voluntary disclosures on key environmental and social topic areas.

[6] Énergir. "2020 Climate Resiliency Report", February 2021. Available at: https://www.energir.com/~/media/Files/Corporatif/Dev%20durable/2020-Energir-Climate-Resiliency-Report.pdf?la=en

4. Verification Processes

Verification of natural gas producer performance and practices is a key aspect of a differentiated gas transaction. Voluntary disclosure of environmental and social performance indicators may be part of verification against specified criteria, but it is likely a transaction would require further verification, potentially through certification. Certification approaches may differ in terms of who is doing the certification, what is being certified, the methodologies used to evaluate performance, and the scope of operations being certified. Methane emissions are a priority topic for industry stakeholders and advanced methane detection and quantification technologies can be used to demonstrate and verify performance.

Key Takeaways

- A key aspect of a differentiated natural gas transaction is verification that the supplier has met established criteria. Third-party certification is the most robust form of verification.
- NGSC is working to support broader standardization of criteria for recognizing environmental and social attributes of natural gas. Linking certification to key criteria and developing generally agreed upon approaches for review will make it easier for companies to differentiate among gas products.
- Better understanding methane emissions is a critical issue for the development of differentiated gas markets. Environmental organization and investor interest in methane emissions has driven development of new technologies to detect and quantify methane leakage from natural gas infrastructure. NGSC is providing feedback to Colorado State University as it develops protocols to compare the effectiveness of methane detection and quantification technologies.
- Methane quantification technologies can be used to validate, either independently or as part of a certification process, the methane emissions associated with natural gas production operations.

Approaches to Certification

There are examples in the marketplace of natural gas producers self-certifying performance, using participation in voluntary programs as a form of certification, and engaging third parties to certify that pre-defined criteria are being met. Self-certification involves a company providing an assurance or guarantee that information is correct. These assurances could be reinforced through voluntary public disclosure of the information. Companies have also referenced participation in industry coalitions as a form of verification. While coalition-scale differentiation does not provide the same level of detail as company-specific certification, it has been highlighted in public transactions for differentiated gas products.

The most robust form of verification is third-party certification. Third-party certification involves external organizations reviewing a company's policies, practices, and performance to ensure specified criteria are met. Producers can have several aspects of their business certified by third parties. A certifier may audit ESG-related data to verify information before it is disclosed. This could include a review of producer GHG emissions data to ensure that it is accurate. Higher levels of certification involve operational audits to confirm that companies are meeting specific standards and performance levels, such as quarterly methane leak detection and repair (LDAR) or use of natural gas-fueled (rather than diesel-fueled) drilling rigs. As producers increasingly use direct measurement of methane to estimate emissions, these measurements could also be validated under a certification program. The most robust certification programs cover both verification of data and operations. Taking methane emissions as an example, a certifier could approve the technology used to measure emissions, confirm that the

methodology used correctly estimates total emissions, and then verify that the producer is achieving a specific methane intensity threshold.

Producers can be certified across a wide range of environmental and social criteria. For example, Project Canary and Equitable Origin are two organizations that have established certification programs that include a pre-defined set of criteria against which they have certified natural gas production operations. Each organization has its own set of criteria, with TrustWell© by Project Canary focused on engineering, environmental, and risk-based aspects of natural gas well development and Equitable Origin including broader categories such as corporate governance and human rights. Project Canary is developing additional attributes for key quantitative metrics beyond its risk-based well certification metrics. An example is the "Low Methane" attribute that producers can attain by implementing specific methane mitigation practices and meeting methane intensity targets.

Certification of producer performance can vary in terms of the scope of operations covered and range from well-level certification to certifying all producer operations. A 2018 deal between Southwestern Energy and New Jersey Natural Gas (NJNG) based on TrustWell certification followed a well-level approach, with Southwestern Energy certifying approximately 20 wells to meet NJNG's demand. At the basin-level, companies could have all production operations within a single basin certified, as was the case with the transaction between Énergir and Seven Generations Energy. At the broadest scale, all producer operations could be certified as meeting specific criteria. This would allow producers to identify all their gas as meeting established criteria and mitigate challenges associated with supplying customers in certain regions with differentiated gas due to a lack of direct pipeline connections.

Challenges Associated with Certification

While natural gas purchasers may increasingly require differentiated natural gas to be certified to verify producer disclosures and performance, is it important to recognize the challenges associated with the certification process. From the producer perspective, certification can add reporting and recordkeeping burdens. Smaller companies may not have the staff or resources to dedicate to the certification process. The costs of certification can also be an obstacle to smaller producers, which may be less able to capture the benefits of selling differentiated natural gas due to lower production volumes. The potential price premium associated with certification is generally passed through to purchasers, posing a challenge for power generators and gas utilities operating in regulated markets. State regulators are bound by "least-cost" principles and may not approve supply contracts for higher-priced, differentiated natural gas. It will therefore be important for stakeholders to engage with regulators and policy makers on the benefits of procuring differentiated natural gas, in particular the role that lower-carbon gas plays in achieving state GHG reduction goals.

Natural gas producer certification helps improve supply chain visibility and is essential to the development of a market for recognizing environmental and social attributes of natural gas. Certification results in additional information about producer practices being shared with the public. It allows for recognition of produced natural gas based on given criteria and provides a mechanism to track desired attributes across the supply chain. As certification regimes and the market grow, third-party certification can provide purchasers, investors, and other stakeholders with flexibility by adopting new metrics in response to customer demand and offering a la carte verification of specific ESG topics.

Transparency throughout the certification process is critical to the growth and success of a differentiated gas market. While different programs were developed to satisfy different demands and naturally have different criteria, evaluation methodologies should be made public to foster understanding of performance across certifications. Similarly, there is a need to standardize definitions and calculation methodologies for quantitative

metrics across the industry to the greatest extent possible. Through the publication of the environmental and social performance indicators and its engagement with NGSI, NGSC is working to support broader standardization of criteria for differentiated natural gas.

Role of Advance Methane Detection and Quantification Technologies

A growing number of oil and natural gas producers are investing in and deploying advanced methane detection and quantification technologies as part of voluntary methane management strategies. These technologies create emerging opportunities for producers to demonstrate leadership in addressing concerns about methane emissions. Management of methane emissions and the use of advanced methane technologies have been included as components of differentiated gas transactions. For example, Project Canary has implemented real-time continuous emissions monitoring both as part of their certification package and as independent emissions monitoring services. A protocol under development by Methane Intelligence (MiQ) includes a requirement to deploy methane monitoring systems, including advanced detection technologies.[7] Equitable Origin is in the process of updating its standard to include methane monitoring technologies and direct emissions measurement.

Many of these technologies are still under development and uncertainty remains over their costs, applicability, and effectiveness. The science of methane detection and quantification has been advanced by efforts such as research at Colorado State University's Methane Emissions Test and Evaluation Center (METEC), the Department of Energy's Methane Observation Networks with Innovative Technology to Obtain Reductions (MONITOR) program, and EDF's Methane Detectors Challenge. These efforts have introduced and evaluated new technologies that can estimate methane emission flow rates, provide continuous monitoring, localize the leak source, and improve the accuracy of methane detection. The technologies being developed range from handheld devices and stationary sensors to equipment mounted on drones, aircraft, and satellites.

Role of Average Emission Factor-Based Inventories

Most GHG inventories for oil and gas sources estimate emissions using average emission factors. The same emission factor is applied to a given source or component across each industry segment, with company-specific emissions determined by the number of sources or components owned or operated by a company. Actual emissions from a specific source can vary significantly from the average emission factor, from the same type of source at another company, across different instances / units of a component within a facility at a given point in time, and from the same source within the same facility over time. The development of component-, facility-, basin-, or company-specific emission factors based on in-field measurements has the potential to improve the accuracy of emission factor-based inventories but would not achieve the level of accuracy provided by continuous monitoring and measurement. However, the current approach of using average emission factors provides insights as it applies a uniform methodology across the industry while minimizing costs. While inventories derived from direct measurements provide a clearer picture of a specific company's performance, it will take time to develop consistent approaches and methodologies, presenting a challenge to efforts to directly compare emissions among companies deploying different measurement technologies across different types of infrastructure.

There are two primary approaches for utilizing methane detection and quantification technologies, both of which support the growth of a market that recognizes environmental attributes of natural gas. Under one approach, devices can serve as an alarm, alerting operators to the presence of high methane levels that may signify a leak. Personnel can then follow up to locate, confirm, and fix the leak. Depending on the type of technology, equipment

[7] See MiQ: https://miq.org/

may be able to identify leak location during the initial detection. Producers that deploy these sensors will be able to detect and repair leaks faster, reducing their overall methane emissions and methane intensity. Implementation of this best practice will contribute to producer efforts to differentiate their product from other suppliers. Natural gas purchaser and investor focus on methane emissions has also driven interest in methane detection technologies. As a result, these technologies are increasingly considered in the ESG criteria that stakeholders use to evaluate producer performance and will likely be integrated into certification regimes.

A second approach uses advanced technology to quantify methane emissions. These systems use algorithms that combine observed methane concentration readings with environmental data such as wind speed to calculate methane leak rates. Many of the technologies that serve the alarm function described above can be paired with software that allows for methane leak quantification. These technologies are still under development and have not been widely deployed by the oil and gas industry. As these technologies evolve and are deployed at scale, they have the potential to significantly enhance natural gas supply chain transparency. For example, methane emissions inventories calculated using accurate in-field data would better represent actual emissions than bottom-up inventories using emission factors and activity data. This type of quantification improves transparency by providing more accurate data, which in turn could be used to differentiate producer performance in terms of total methane emissions or methane intensity. Advanced methane quantification technologies could be used to validate emissions either as part of a certification scheme or independently for an individual company or asset.

Natural gas producers are already using direct measurement of methane emissions by advanced technologies to develop internal emissions inventories. While official inventories such as EPA's Greenhouse Gas Reporting Program (GHGRP) will continue to rely on average emission factors (see text box above), direct measurements can be used to improve the emission factors used by these inventories. The GHGRP allows companies to develop and use company-specific emission factors for select sources but uses average emission factors to estimate emission from most natural gas infrastructure. In the future, revisions to the GHGRP could establish methodologies that would allow approved technologies to be used to calculate company- or even facility-specific emission factors for a greater number of sources. These unique emission factors would more closely reflect actual emissions and thus improve emissions inventories.

As direct-measurement technologies continue to improve and are deployed at natural gas production facilities across the U.S., EPA could develop an approach that would go beyond customized emission factors and allow companies to directly report measured emissions. A determinization of equivalency for multiple methane quantification technologies would allow companies to use different systems while still allowing for a direct comparison of emissions performance across companies. However, inventories calculated via direct measurement would not be comparable to those estimated via emission factors, which would pose a challenge to comparisons across the industry given the inconsistent voluntary adoption of methane quantification technologies by natural gas producers.

Deployment of methane quantification technologies has the potential to not only demonstrate leading management practices but also provide the data needed to demonstrate and verify the effectiveness of those practices. As with the purely detection approach discussed above, stakeholders will increasingly expect leading producers to incorporate or respond to information from advanced methane quantification technologies, whether deployed by producers themselves or by third parties. Given the priority focus on methane, these technologies and the data they provide will be key differentiating factors in gas market transactions.

5. Mechanisms for Tracking Attributes

The ability to track the environmental and social metrics associated with produced natural gas is critical to the development of an expanded market for differentiated natural gas. Without transparent information about practices and performance, stakeholders cannot evaluate supply options. Transparency is also critical to track natural gas and any attributes as they are bought and sold. This tracking is particularly important to support differentiated gas transactions that involve natural gas marketers and are not directly between producers and purchasers.

Key Takeaways

- The development of systems that track the attributes associated with natural gas will support the growth of a differentiated gas market and facilitate transactions via natural gas marketers.
- Attribute tracking will allow for the creation of certificates representing specific criteria that can be unbundled from natural gas and sold or traded independently, increasing the potential scale of a differentiated gas market.
- Marketers have an opportunity to play a key role in matching supply and demand of differentiated produced natural gas. NGSC is working with natural gas marketers to identify approaches to understand the environmental and social practices and performance of natural gas supply.

Role of Natural Gas Marketers

As NGSC participants have worked to expand engagement with natural gas suppliers to encourage disclosure of environmental and social performance indicators, the structure of natural gas markets has presented a challenge. A significant volume of natural gas is purchased through marketers. Natural gas marketers serve a critical role in the industry by matching buyers and sellers and offering delivery contracts structured to buyer needs. For example, a company purchasing natural gas for use in a power plant may purchase a volume of gas for delivery by a marketer at a future date based on projected electricity demand. On the delivery date, the marketer will engage with counter parties to ensure that the supply of gas is available, consistent with the terms of the contract. If the power company needs additional gas, it may contract with the marketer for additional supply shortly before the delivery date. Working with suppliers and purchasers, natural gas marketers create liquidity in the marketplace that increases the flexibility of purchasers to respond to customer demands.

Because the volumes sold by marketers may consist of gas from multiple producers and may have already changed hands prior to its final sale, it is difficult to know how, where, and by whom the gas was produced. This opacity poses a challenge to integrating producer performance and disclosure into procurement decisions and complicates purchaser efforts to improve supply chain transparency.

While a natural gas purchaser may have a contractual relationship with a natural gas marketer for gas delivered at an agreed upon price, the source of that gas is obscured by the interconnected gas network. Even with increased producer transparency of environmental and social practices, the purchaser has limited information about the characteristics of purchased gas. Consequently, most of the differentiated natural gas transactions to date (summarized in Table 1) have involved bilateral contracts between producers and natural gas utilities wherein the buyer has a physical connection across the natural gas value chain to the producer. In these contracts, gas suppliers ensure that a volume of gas equivalent to the purchased volume is on the system that is accessed by the purchaser. A key area of interest for NGSC is moving beyond bilateral contractual mechanisms between producers and buyers and identifying ways to track the characteristics, or attributes, of all delivered natural gas.

Marketers can play a key role in improving supply chain visibility by collecting and providing data on environmental and social practices of the producers from which they source gas. If marketers track environmental and social data related to volumes of gas purchased, this information could become part of downstream transactions. For example, a natural gas marketer could have access to large volumes of natural gas with attributes such as methane emissions intensity and freshwater intensity. A natural gas utility buying from that marketer could request a volume of natural gas with intensities meeting specific metrics. The marketer could then pool volumes meeting those criteria from multiple producers to meet the utility's demand. At a simpler level, marketers could publish a list of the producers they source gas from and purchasers could request to buy volumes associated with particular producers based on known environmental and social performance or criteria (e.g., certification, voluntary disclosures).

Table 1. Examples of Differentiated Gas Transactions

Purchaser	Producer	Criteria	Verification	Transaction
Énergir	Seven Generations Energy	EO100™ Standard, Disclosure of KPIs	Third-party certification by EO-approved auditor	Bilateral contracts for natural gas
New Jersey Natural Gas	Southwestern Energy	SWN-developed package (ONE Future, TrustWell*, Freshwater Neutral)	Participation in ONE Future, third-party certification by TrustWell*, self-certification of water program	Bilateral contracts for natural gas
South Pole	Carbon Creek Energy	TrustWell*	Third-party certification by TrustWell*	Exchange-based contract for certificates and underlying gas commodity
Vermont Gas	Seven Generations Energy	EO100™ Standard, Disclosure of KPIs	Third-party certification by EO-approved auditor	Bilateral contracts for natural gas
Virginia Natural Gas	Southwestern Energy	ONE Future standards, TrustWell*	Achievement of ONE Future production target utilizing NGSI, third-party certification by TrustWell*	Bilateral contracts for natural gas
Xcel Energy	Crestone Peak	TrustWell*	Project Canary: TrustWell & Continuous Monitoring	Bilateral contracts for natural gas

*TrustWell (Formerly International Energy Standards, IES)

Mechanisms for Tracking Attributes

The continued development of systems for creating, tracking, and retiring certificates representing environmental and social attributes of natural gas will accelerate the growth of a differentiated gas market. These systems transform attributes related to environmental and social metrics into a digital format that ensures their integrity

and guarantees their authenticity. A number of commodity exchanges have developed the digital infrastructure to support these types of transactions.

Digital identifiers allow unbundling of attributes from natural gas. This enables purchasers to buy certificates representing specific criteria even if they do not purchase the gas itself. Similar to renewable energy credits or emissions allowances, certificates could be bought, sold, or traded. Unbundled certificates would allow natural gas purchasers to support differentiated natural gas production meeting identified environmental and social criteria even if the purchaser's network has no physical connection to the source of the gas.

For example, a transaction between Carbon Creek Energy and South Pole involved the creation of unbundled digital certificates representing TrustWell certification and the fact that the gas was not produced via hydraulic fracturing. While South Pole purchased both the gas and the certificates, the unbundled certificates could be sold to a third party to "offset" its natural gas use. Widespread adoption and acceptance of these digitized transactions, particularly at the state regulatory level, has the potential to expand the differentiated natural gas market and allow natural gas producers to connect with purchasers seeking gas that meets specific criteria.

Differentiated Natural Gas Supply and Demand

Due to the nascent stage of the differentiated gas market, key market information is not widely available. Potential buyers lack information on supply availability and costs. At the same time, natural gas producers are hesitant to invest in third-party certification without a guaranteed buyer, especially in a time of sustained low natural gas prices. While the lack of public data is real, many of the concerns drawn from that lack of data are not. For example, internal reviews of voluntary producer disclosures by NGSC have highlighted that many of the largest gas producers in the U.S. are implementing the best practices and achieving the quantitative metrics required by certification schemes. In this sense, there may be a significant supply of gas that meets certification standards that simply has not yet been officially certified.

Many producers can deliver contracted gas directly to purchasers across North American via interconnected transmission pipelines. As the market matures and criteria are better defined, marketers will likely have opportunities to serve differentiated gas markets. Additionally, as systems for tracking unbundled environmental and social attributes mature certified gas may be sold even when the path between producer and purchaser is obfuscated.

Digital identifiers for delivered natural gas could also simplify purchasing of differentiated natural gas sold by marketers. Certificates offer flexibility as any attribute or criteria can be assigned to a given unit of natural gas. With the ability to track both gas and unbundled attributes, marketers could match gas volumes with a purchaser's criteria (e.g., low methane intensity), even if the gas and certificates originate from different producers. This system eliminates challenges related to tracking gas and attributes transacted across multiple intermediaries and expands the potential scale of a differentiated natural gas market.

The ability to match demand for differentiated gas with a supply of natural gas and/or certificates that meet specific criteria presents a potential opportunity for natural gas marketers. As demand for differentiated natural gas grows, marketers able to trace natural gas back to individual producers will benefit from the increase in criteria-based contracts. NGSC is engaging with natural gas marketers to develop a framework that expands opportunities for differentiated natural gas transactions.

6. Conclusion

NGSC is committed to working with all interested parties to establish a clear framework for a natural gas market that recognizes environmental and social attributes. This paper focuses on four key elements required for a robust differentiated gas market. The elements include:

- **Environmental and social performance indicators.** The Appendix features an updated and refined list of environmental and social performance indicators. NGSC welcomes feedback on this list and looks forward to continued engagement with customers, investors, environmental organizations, and natural gas suppliers to solicit feedback across all the identified non-financial topic areas. In the near term, NGSC is focused on improving disclosure and understanding of methane emissions and methane emissions intensity throughout the natural gas supply chain.
- **Voluntary disclosure.** Robust voluntary disclosure offers important benefits to the natural gas industry. It provides the opportunity for companies to directly communicate with the public and educate stakeholders about corporate priorities and sustainability practices. NGSC continues to look for opportunities to support increased reporting on environmental and social performance indicators by supply chain partners.
- **Verification processes.** Consistent with a nascent market, there are several emerging models for certification of environmental and social performance and practices. Moving forward, these models will likely evolve to best serve the needs of market participants. NGSC will work with certification organizations and industry initiatives such as the NGSI to better define certification criteria and key areas of interest. NGSC participants are interested in continued development and deployment of advanced methane detection and quantification technologies to better respond to customer, investor, and environmental organization questions about the climate impacts of natural gas. NGSC is engaged as a reviewer of a process led by researchers at Colorado State University to develop protocols for demonstrating the effectiveness of various approaches to methane detection and quantification. NGSC will continue to engage in that process and look for other opportunities to support the development of approaches to better manage methane emissions throughout the natural gas supply chain.
- **Mechanisms for tracking natural gas attributes.** Investors and customers are actively engaged with companies to understand environmental and social practices and performance. The natural gas industry has an opportunity to respond to these questions and demonstrate that the entire supply chain is taking action to address environmental and social concerns by tracking environmental and social attributes. NGSC participants have identified natural gas marketers as a key partner in improving transparency. NGSC is working to expand engagement with natural gas marketers and commodity exchanges to support development of systems that connect differentiated gas supply with demand for gas meeting specific environmental and social performance metrics.

Given stakeholder focus on methane emissions and the increase in differentiated natural gas offerings, a key next step is defining the specific methane criteria by which gas should be differentiated. To support this, NGSC will develop a brief on the methane criteria that large natural gas purchasers and their stakeholders consider important for inclusion in a differentiated natural gas product. These include how methane emissions are calculated and the role of direct measurement, validation and certification of emissions performance, and critical company best practices implemented to reduce methane emissions. This forthcoming document will lay out what NGSC members hope to see included in differentiated natural gas products as a means to support transparency and the continued growth of a market for differentiated gas.

Appendix: Updated Environmental and Social Performance Indicators for Natural Gas Production

The environmental and social performance indicators are structured as quantitative indicators and management strategy indicators that could be reported annually to provide greater insight into how natural gas producers are managing the potential impacts of natural gas development. The performance indicators are drawn from existing reporting programs.[8]

Quantitative indicators seek measurable data that can be used to better understand and manage a topic. The data could be used to measure the success of management strategies or to provide objective information into how companies are limiting impacts. When reported over multiple years, quantitative indicators can be used to understand changes in operations and trends. NGSC participants are particularly interested in quantitative information on a regional or basin level reflecting the market areas from which they draw gas and recognizing stakeholder interest in local and regional information.

The management strategy performance indicators are mostly qualitative and encourage information on how companies are systematically managing key issues across their operations. The indicators seek information on key strategies that are indicative of the strategies that are deployed by leading companies to manage the identified topics.

Methane and Air Emissions

Summary of Methane and Air Emissions Quantitative Performance Indicators

Performance Indicators	Reporting Guidance
Methane Emissions: What are the total methane emissions of your operations, and what is the methane emissions intensity of your operations, calculated following the Natural Gas Sustainability Initiative (NGSI) Protocol?*	• Provide data included under the public disclosure recommendations in the NGSI Protocol, including company-wide methane emissions and methane emissions intensity calculations. • Provide a breakdown of emissions and emissions intensities by area of operations in addition to a company-wide figure.
Greenhouse Gas Emissions: What are the total greenhouse gas (GHG) emissions of your operations, and what is the GHG emissions intensity?*	• Report total GHG emissions (i.e., metric tons of carbon dioxide-equivalent or CO_2e) from drilling, completion, and natural gas production operations (e.g., combustion, venting, flaring and fugitive emissions) for each calendar year. • Report total GHGs emitted per unit of total hydrocarbon production (kg CO_2e/BOE) for each calendar year, including the emissions and hydrocarbon production (i.e., total volume of natural gas and petroleum produced) figures used to calculate intensity. • Provide a breakdown of GHG emissions and emissions intensity by area of operations in addition to a company-wide figure.

[8] See the technical supplement published in October 2017 for additional information on the methodology and approach to developing the initial set of environmental and social performance indicators available at: https://mjbradley.com/sites/default/files/NGSCSupplementFinal.pdf

Performance Indicators	Reporting Guidance
	• Report the methodology used to calculate total GHG emissions. The Greenhouse Gas Reporting Program (GHGRP) maintained by EPA provides a standardized approach to reporting greenhouse gas emissions. GHG emissions reported to the GHGRP could provide the basis for estimates of GHG emitted during natural gas drilling, completion, and production. To the extent a company follows a different approach, it should explain its methodology.

*NGSC is currently focused on the natural gas production segment. Companies operating in multiple segments of the oil and gas supply chain are encouraged to report methane emissions, GHG emissions, and associated emissions intensities for all of the segments in which they operate.

Summary of Methane and Air Emissions Management Strategy Performance Indicators

Performance Indicators	Reporting Guidance
Overall Methane Strategy: What is your strategy for limiting methane emissions?	Report strategies for addressing methane emissions, including: • Utilization of a leak detection and repair (LDAR) program with a discussion of survey frequency, repair timing, technology used, existing regulatory requirements, and policies for training or contracting technicians. • Use or research into the use of direct methane detection and measurement technologies. • Adoption of company-wide methane targets. • Participation in voluntary initiatives (e.g., industry collaboratives) • Descriptions of other voluntary reduction efforts (e.g., replacement of natural gas-actuated pneumatic controllers, control of tanks, etc.)

Water

Summary of Water Quantitative Performance Indicators

Performance Indicators	Reporting Guidance
Water Use: What are the sources of water for completions (hydraulic fracturing) at your operations by volume and percentage of total volume? For freshwater, what is the intensity of use?	• Report total water used onsite each year for completions (hydraulic fracturing) related to natural gas production, by source of water (i.e., gallons and percentage of total). • Report total freshwater used each year for completions (hydraulic fracturing) per unit of natural gas production (e.g., gallons per mcf or mmBtu), including the freshwater used (i.e., gallons) and natural gas production (i.e., total volume of natural gas produced) figures used to calculate intensity. • Provide a breakdown of water use and freshwater intensity by area of operations in addition to a company-wide figure. • The definition of freshwater may vary across states and areas of operations. Clearly defining freshwater is important to allow for tracking both across multiple areas of operation within a company and across different natural gas producers.
Water Testing: Do you conduct pre- and post-drill groundwater testing? What is the frequency and location?	• Report frequency of pre- and post-drilling water testing by area of operations. • Report location of water testing, including distance from well sites and proximity to surface impoundments. • Leading practices may include the sampling of potentially affected water sources for as long as there is active production in the area, given the long periods of time that it may require for fluids and gas to migrate through underground formations.

Performance Indicators	Reporting Guidance
Spill Reporting: What were the number and volume of hydrocarbon and non-hydrocarbon spills to soil and water from your operations?	• Report total number, location, and volume of hydrocarbon and non-hydrocarbon spills to groundwater, surface water, and soil each calendar year. • Given the potential for different definitions across companies and regions, natural gas producers reporting spill data should include the criteria used to define what constitutes a spill. • This indicator only requests disclosure on spills to soil and water and would not include releases that are captured in containment structures or otherwise prevented from reaching the environment. • Some states require producers to report spills. To the extent producers do so, they could provide the same information in an accessible format along with the definition of a spill.

Summary of Water Management Strategy Performance Indicators

Performance Indicators	Reporting Guidance
Freshwater Use Strategy: What are your strategies for managing freshwater use?	Report strategies for managing freshwater use, including: • Approaches to manage water across the lifecycle, including sourcing, use, and disposal. • Use of pre-development risk assessments. • Description of freshwater use reduction strategies and goals.
Well Planning and Integrity Strategy: What are your approaches to well planning and strategies for maintaining well integrity?	Report strategies for well planning and maintaining well integrity, including: • Use of pre-drill assessments for offset wells and communication risks. • Overview of well construction techniques and standards. • Description of well integrity testing practices.
Wastewater Management Strategy: What are your strategies for managing water onsite and wastewater?	Report strategies for managing water, including: • Practices for storing wastewater. • Description of recycling/reuse strategies and goals. • Summary of disposal methods and approaches to addressing induced seismicity.

Chemical Use

Summary of Chemical Use Management Strategy Performance Indicators

Performance Indicators	Reporting Guidance
Chemical Management Strategy: What are your strategies for managing chemicals?	Report strategies to manage chemicals, including: • Support for chemical disclosure and identification of any exceptions to reporting due to confidential business information claims. • Practices on reducing chemicals or using “green” chemicals in fracturing fluids. • Policy to not use diesel or BTEX in fracturing fluids.

Community and Safety

Summary of Community and Safety Quantitative Performance Indicators

Performance Indicators	Reporting Guidance
Safety Incident Rates: What was your accident rate, incident rate, fatality rate, and near miss frequency rate for employees and contractors?	• Provide total recordable injury rate (TRIR), lost time incident rate (LTIR), fatality rate, and near miss frequency rate for employees and contractors each year. • Provide a breakdown by geographic area of operations in addition to a company-wide figure.

Summary of Community and Safety Management Strategy Performance Indicators

Performance Indicators	Reporting Guidance
Community Engagement Strategy: What are your strategies for protecting and engaging with communities?	Report your strategies to engage communities, including: • Use of a community outreach/complaint line. • Development of a system for tracking community concerns. • Policy for pre-development community engagement. • Adoption of infrastructure setback policy around homes, schools, and other sensitive areas. • Support for local community emergency response training and planning.
Contractor Performance Strategy: What are your strategies for ensuring contractor health, safety, and environmental performance?	Report your strategies for ensuring contractor performance, including: • Practices for pre-hire screening. • Training and safety programs for contractors. • Audits of contractor safety and environmental performance.