



Guidance for Including Methane Abatement in Oil and Gas Debt Structuring

A Product of the Methane Finance Working Group

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Table of Contents

Introduction

Introduction to the Guidance

4

Guidance: Use-of-Proceeds Instruments

Guidance for Including Methane and Flaring Abatement in Use-of-Proceeds Instruments

22

Guidance: KPI-Linked Instruments

Guidance for Including Methane and Flaring Abatement in KPI-Linked Instruments

44



Click buttons and underlined text to navigate to your chosen destination.

A Note to the Reader

The three main parts of this document—the Introduction, the Use of Proceeds Guidance, and the KPI-Linked Instruments Guidance—are designed to be read as related but self-contained sections. To ensure each part can be understood independently, key background information, acronym definitions, and numbering restart accordingly.

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[†] As a knowledge partner

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Document designed and produced
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[Introduction](#)

[Guidance: Use-of-Proceeds Instruments](#)

[Guidance: KPI-Linked Instruments](#)





An Introduction to the Guidance for Including Methane Abatement in Oil and Gas Debt Structuring

1. [Executive Summary](#)
2. [The Case for Using the Debt Capital Markets to Facilitate Methane Abatement](#)
3. [The Opportunities and Challenges for Debt Capital Markets](#)
4. [Guidance for Including Methane Abatement Activities in Oil and Gas Debt Structuring](#)

Introduction

Guidance: Use-of-Proceeds Instruments

Guidance: KPI-Linked Instruments



1 EXECUTIVE SUMMARY

COP28 produced a sea change in the oil and gas industry's commitments to the global effort to reduce methane and flaring emissions. Fifty companies responsible for 40% of global oil production joined the Oil and Gas Decarbonization Charter (OGDC), committing to virtually eliminate methane and flaring pollution. Among the companies were 29 National Oil Companies (NOCs), a segment of the industry that produces more than half the world's oil and gas and, until OGDC, had been largely absent from industry emission reduction initiatives. Since the 28th Conference of the Parties (COP28), OGDC has grown to include 56 companies and stands to be a potentially powerful driver of future industry-led efforts. At COP28, the World Bank also introduced the Global Flaring and Methane Reduction Partnership's Trust Fund (GFMR), designed specifically to help NOCs access technical expertise to build internal capacity and seed funding for methane and flaring abatement projects.

Given these developments, the **Methane Finance Working Group (the Working Group)** was formed to assess how debt capital markets could adapt existing financing structures to deploy capital toward emission reduction strategies across oil and gas company operations. ***The Guidance for Including Methane Abatement in Oil and Gas Debt Structuring (the Guidance)*** is a consolidation of the Working Group's findings and recommendations, suggesting a path for financial firms and oil and gas companies to create credible, practical, and mutually beneficial arrangements that prioritize methane and flaring reduction projects.

The Guidance aims to facilitate the rapid deployment of capital at scale for methane and flaring emissions reductions by creating an ecosystem where capital seekers, capital providers, and structuring agents can confidently engage in transactions that fulfill fiduciary responsibilities, align with scientific consensus, and are operationally achievable.

The Guidance draws on input from the Working Group, a multi-stakeholder group composed of financial institutions, oil and gas companies, civil society organizations, academics, and climate science experts. This group discusses the opportunities and challenges of prioritizing and scaling methane and flaring emissions abatement globally. While the Guidance is applicable for many types of oil and gas producers, it may be particularly helpful for NOCs and certain independent producers that face economic and operational challenges distinct from International Oil Companies (IOCs).

A Central Role for NOCs

While the Guidance is designed to accommodate a range of capital seekers, it is particularly applicable to National Oil Companies (NOCs). As the backbone of the global oil and gas industry, NOCs control more than half of the world's reserves, production, and methane emissions.

Most NOCs are critical to their national economies, and preventing unnecessary product loss through methane abatement offers a direct path for NOCs to strengthen global competitive advantage, improve operational safety, and enhance stewardship of national resources. Yet many face challenges in accessing capital markets for emission mitigation.¹ Additionally, many NOCs are located in emerging and frontier markets that are disproportionately affected by climate change. Mitigating further warming presents an opportunity for these companies and their host countries to avoid significant losses.²

¹ Conway, *Cutting Through the Noise: Look to Market Forces for Methane Momentum* (Boulder: RMI, 2025), <https://rmi.org/cutting-through-the-noise-look-to-market-forces-for-methane-momentum/>.

² Fuje et al., *Fiscal Impacts of Climate Disasters in Emerging Markets and Developing Economies* (Washington, D.C.: International Monetary Fund, 2023), <https://www.imf.org/en/Publications/WP/Issues/2023/12/15/Fiscal-Impacts-of-Climate-Disasters-in-Emerging-Markets-and-Developing-Economies-542408>.

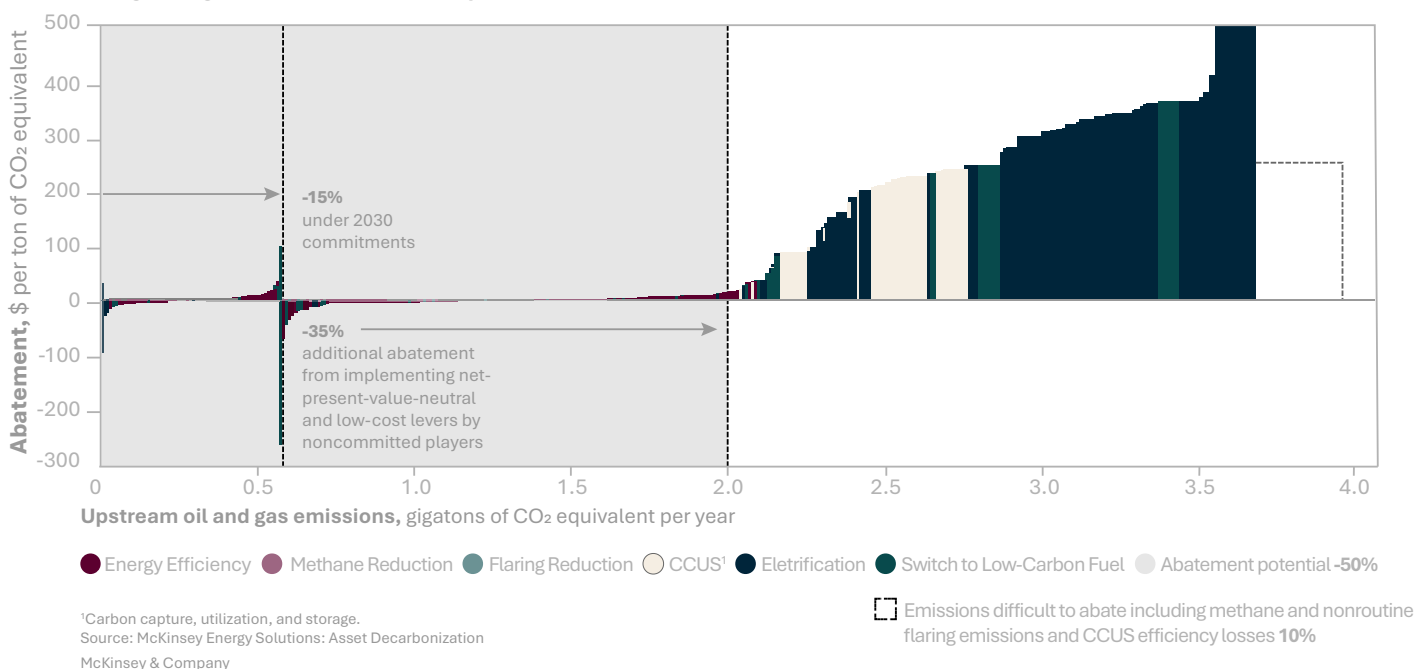
WHY DID THIS WORKING GROUP COME TOGETHER?

Technology for abating methane and flaring emissions has become increasingly available and cost-effective. Deploying known solutions across sectors could cut the amount of methane from human sources in half by 2030, avoiding 0.25 °C by midcentury, and more than 0.5 °C by 2100. Around 80% of the no-cost actions to address methane in this scenario would come from the oil and gas industry.³ No other sector could cut emissions this much solely by addressing its own operational inefficiencies. McKinsey estimates that if the oil and gas sector were to meet its existing reduction commitments under the OGDC and deliver on all net present value reduction opportunities, it would represent a 4% reduction in global greenhouse gas (GHG) emissions.⁴

Figure 1: Global Oil and Gas Marginal Abatement Cost Curves, by 2030

The potential for upstream oil and gas emission abatement is up to 50 percent if 2030 commitments are met and noncommitted players implement solutions.

Global oil and gas marginal abatement cost curves, by 2030



Methane Emissions: A Powerful Short-Term Climate Impact

Over 20 years, methane is 80 times as powerful as carbon dioxide at trapping heat. As a result, it is responsible for over 30% of human-caused warming and is critical to reducing the impacts of climate change.⁵ The Intergovernmental Panel on Climate Change (IPCC) has stated that there is no plausible pathway to limit temperature rise to 1.5 °C without deep reductions in methane emissions as well as carbon dioxide.⁶

³ Ilissa B. Ocko et al., *Acting rapidly to deploy readily available methane mitigation measures by sector can immediately slow global warming* (Bristol: IOP Publishing, 2021), <https://iopscience.iop.org/article/10.1088/1748-9326/abf9c8>.

⁴ Gustaw Szarek et al., *The true cost of methane abatement: a crucial step in oil and gas decarbonization* (New York: McKinsey & Company, 2024), <https://www.mckinsey.com/-/media/mckinsey/industries/oil%20and%20gas/our%20insights/the%20true%20cost%20of%20methane%20abatement%20a%20crucial%20step%20in%20oil%20and%20gas%20decarbonization/the-true-cost-of-methane-abatement-a-crucial-step-in-oil-and-gas-decarbonization.pdf?shouldIndex=false>.

⁵ Intergovernmental Panel on Climate Change, *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*, 2021. <https://www.ipcc.ch/report/ar6/wg1>.

⁶ Intergovernmental Panel on Climate Change, "Summary for Policymakers," in *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* (Geneva: World Meteorological Organization, 2018), <https://www.ipcc.ch/sr15/chapter/spm/>.

In almost all scenarios, natural gas demand is projected to either persist or, often, increase over the next five to ten years.⁷ However, S&P Global estimates that more than 70% of 112 billion cubic meters (bcm) of potential natural gas supply due to lost methane and flared natural gas could be captured with a positive net present value (NPV), helping to reduce emissions and offset the need for additional supply without new drilling.⁸

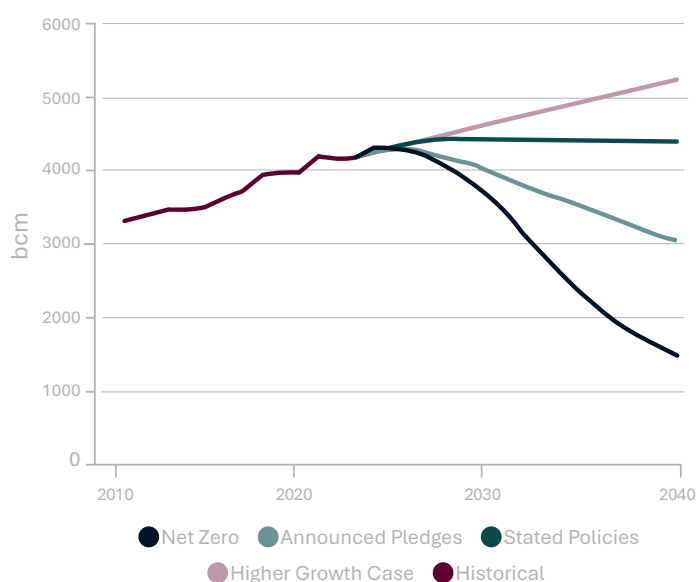
The International Energy Agency (IEA)’s Net Zero Emissions (NZE) scenario recommends a 75% reduction in methane emissions from the oil and gas sector by 2030 as one key lever to prevent the most costly and dangerous climate impacts. Remaining aligned with the NZE requires rapid reductions in both methane and carbon dioxide emissions. However, methane emissions from the energy sector remained at record highs in 2023, driven in large part by the oil and gas industry.⁹

Methane regulations and emerging policies seeking to measure and limit emissions across the value chain are on the rise in key import markets. Yet despite favorable economics and emerging policy support, the industry has deployed far less capital for methane abatement than is required to achieve reductions needed by 2030. To capture possible climate gains, new strategies are needed to drive faster and steeper emissions reductions. Therefore, climate-aligned financial intermediaries and their stakeholders should consider applying market-tested finance mechanisms that have been used by other sectors for over a decade to drive decarbonization.

The Working Group was formed to address these challenges, focusing on how certain debt capital market mechanisms may support their decarbonization efforts. By developing guidance based on climate science, current market practices, and a rigorous understanding of methane reduction technologies, the Working Group aims to offer recommendations that are both credible and practical for market participants.

Ultimately, it is at the capital provider’s discretion to decide if an abatement program or project is ambitious enough relative to its policies and aligned with its fiduciary duty. The Guidance is offered as a roadmap to help capital seekers clearly convey their ambition and impact to all stakeholders.

Figure 2: Projected Global Gas Demand Scenarios to 2040



⁷ International Energy Agency. *World Energy Outlook 2024*. Paris: IEA, 2024. <https://www.iea.org/reports/world-energy-outlook-2024>.

⁸ S&P Global, *Levers for capturing flared gas and methane emissions* (New York: S&P Global, 2022), <https://cdn.ihsmarket.com/www/pdf/1222/EDF---Executive-Summary---Levers-for-capturing-flared-gas-and-methane-emissions.pdf>.

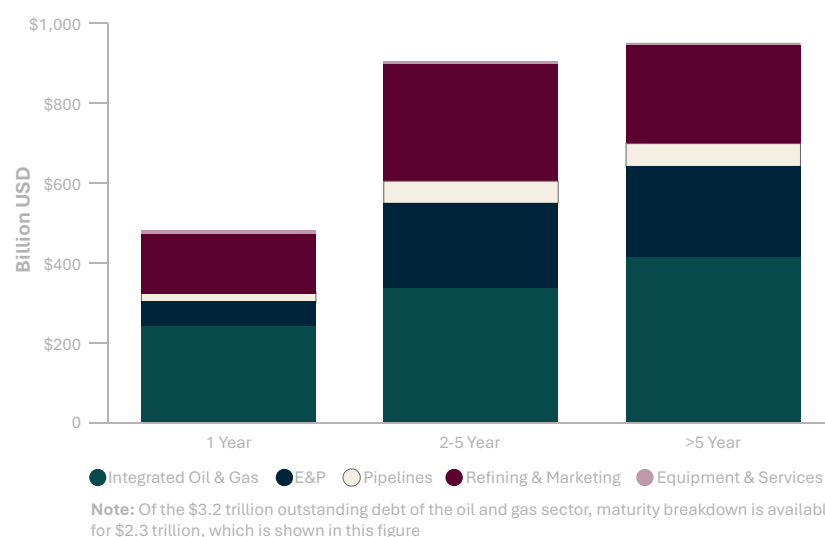
⁹ International Energy Agency, United Nations Environment Programme, and Environmental Defense Fund, *Turning Pledges into Progress: An Accountability Framework for Reducing Emissions from the Oil and Gas Industry*. <https://library.edf.org/AssetLink/803l8k237h22hmv1r720s23tf5514636.pdf>

WHY SHOULD MARKET PARTICIPANTS CONSIDER USING THIS GUIDANCE?

There is a powerful near-term opportunity to drive change in how methane and flaring emissions are addressed across a substantial portion of the oil and gas industry.

Almost two-thirds of oil and gas company debt will mature in the next five years, which means many companies will be approaching the debt market anew before 2030. This creates a timely opportunity for financial intermediaries to encourage the prioritization of spending on abatement by attaching conditions related to new debt obligations and the refinancing of current obligations (see Figure 3).

Figure 3: Maturity Profile of Outstanding Debt of Oil and Gas Companies¹⁰



The IEA estimates that \$175 billion in investments will be required by 2030 to deploy methane abatement measures in line with the NZE, with just over \$100 billion needed to monitor and plug abandoned wells with significant levels of emissions.¹¹ McKinsey estimates this number is \$200 billion, of which \$120 billion would be for upstream infrastructure to bring recovered methane to the nearest gas demand centers.¹² These estimates translate to around \$30 billion–\$40 billion in annual capital deployment in the sector, or less than 1% of the net income received by the oil and gas industry in 2022.¹³

This Guidance also helps capital seekers prepare for evolving gas import market requirements. The European Union (EU) leads in requiring emissions intensity data for traded oil and natural gas, with other regions potentially following. In 2023, Japan and South Korea launched the Coalition for Liquefied Natural Gas (LNG) Emissions Abatement toward Net-zero (CLEAN), led by major LNG buyers JERA and Kogas and their respective government ministries. CLEAN focuses on collecting data from gas suppliers regarding their monitoring, reporting, and verification (MRV) practices and methane reduction plans. The first CLEAN annual report was released in October 2024, with over 20 companies participating representing over 90% of Korean and Japanese imports. As the EU ramps up regulation, CLEAN offers Japan and Korea a platform to coordinate regional efforts and prepare for future mandatory policies. This, in turn, encourages global gas suppliers to disclose and improve their upstream production emissions to meet rising expectations from the EU and Northeast Asian markets.¹⁴

The Guidance provides a roadmap for capital seekers across the oil and gas value chain to drive rapid, meaningful methane and flaring emissions reductions from their assets in a transparent and verifiable manner. Following this roadmap allows them to improve asset quality, support long-term competitiveness by aligning with critical customer bases, and positively contribute to decarbonization. To be most effective, methane and flaring abatement efforts should be integrated within a company's broader decarbonization and/or transition strategy to ensure consistency with long-term decarbonization goals.

¹⁰ Center on Global Energy Policy, *A Roadmap to Catalyze Methane Abatement in the Oil and Gas Sector Using Debt Financing* (New York: Columbia University, 2025), based on data from Bloomberg L.P., accessed June 2025.

¹¹ International Energy Agency, *Overcoming barriers to abatement, in Global Methane Tracker 2025* (Paris: IEA, 2025), <https://www.iea.org/reports/global-methane-tracker-2025/overcoming-barriers-to-abatement>.

¹² Gustaw Szarek et al., *The true cost of methane abatement*.

¹³ Data from the Bloomberg Terminal, accessed June 2025.

¹⁴ Book, Kevin, Ben Cahill, Kyle Danish, Carrie Jenks, and Bob Stout. Will Trump Mend or End Federal Methane Rules? White paper. Center for Energy and Environmental Systems Analysis, University of Texas at Austin. https://static1.squarespace.com/static/66f440245e8cad0f685673ec/t/6792b95bba2c704e76780b96/1737668958638/Jan+2025+White+Paper_FINAL_V3.pdf

WHICH MARKET PARTICIPANTS DOES THIS GUIDANCE TARGET?

This voluntary Guidance is for capital seekers and capital providers to structure debt finance transactions that prioritize the quick deployment of capital to reduce methane and flaring emissions.

The Guidance has been designed to accommodate the heterogeneity of the sector, taking the varied governance, capital structures, and technical capacity of capital seekers and their counterparties into account. While the Guidance has a particular focus on independent producers and NOCs in emerging and frontier markets, given their financing needs and barriers to entry, its principles are broadly applicable. **It can be used to assist emission reduction efforts across the entire oil and gas value chain, including:**

- Well-capitalized NOCs and IOCs
- Oilfield service providers
- Midstream operators
- Incorporated joint ventures (JVs), operating companies (OpCos) and special purpose vehicles (SPVs)
- Independent producers

The Guidance is also relevant for financial intermediaries, such as oil and gas investors, financial asset managers, financial asset owners, and multilateral development institutions.

WHAT IS INCLUDED IN THE GUIDANCE?

The Guidance supports the inclusion of methane and flaring abatement activities through the use of proceeds (UoP) and key performance indicator (KPI)-linked bond and loan structures. Given the scale and market familiarity of these instruments, primarily through the Green, Sustainability, Social, and Sustainability-linked (GSSS) bond market, the technical recommendations have been designed to integrate with prevailing industry and regulatory standards.

With the ongoing evolution of naming conventions, such as the Sustainable Development Goal (SDG) Bonds and Transition Bonds, this Guidance takes an agnostic approach to naming conventions. Rather than focusing on labels, it prioritizes aligning financial instruments with the overarching principles set forth by the International Capital Markets Association¹⁵ (ICMA) in their capacity as the Secretariat for the Green Bond Principles (GBP) and Sustainability Bond Guidelines (SBG).¹⁶

The framework focuses on short- to mid-term emissions reductions required by 2030 but also outlines considerations for longer-dated projects and maturities to allow flexibility for both capital seekers and capital providers. While it primarily aligns with ICMA GSSS bond guidance, the recommendations are also broadly applicable to private credit, project finance, and loans.

A note on terminology: For the purposes of brevity, this document refers to both borrowers and issuers as “capital seekers.” While the differences between bonds (and their coupon payments) and loans (and their interest payments) are critical factors in structuring specific transactions, this guidance is meant to be illustrative and, therefore, uses these concepts interchangeably. Feedback is welcome on how the Guidance should more specifically address loans in subsequent iterations.

Stakeholders interested in leveraging this guidance for methane and flaring abatement in loan instruments may consider referencing the recently updated Green Loan Principles (GLP) and Sustainability-Linked Loan Principles (SLLP), along with their supporting guidance, which are jointly developed and published by the LSTA, the Loan Market Association (LMA), and the Asia Pacific Loan Market Association (APLMA).

WHY IS SPECIFIC GUIDANCE NEEDED FOR METHANE IN THE OIL AND GAS SECTOR?

Despite the GSSS bond market's success in facilitating transactions across sectors, the oil and gas sector has been challenged in accessing this market in a way that is viewed by stakeholders as credible and ambitious.

To address this, the Guidance is structured to mitigate actual and perceived greenwashing risks (discussed further in [Section 3](#)) through best practices and guardrails.

By delivering recommendations for accountability, the Working Group aims to foster an ecosystem that enables the deployment of capital at scale to significantly reduce methane and flaring emissions in the real economy. The Guidance's robust technical standards and operating procedures are founded on the best available climate science, industry standards, and regulatory frameworks, incorporating the real-world experience of abatement practitioners. This development process was centered on input from climate scientists and technical experts, while the broader perspectives of think tanks, non-profit advocacy groups, multilateral development banks, and energy market modelers were essential to designing credible guardrails against greenwashing.

The Guidance provides a roadmap for capital seekers across the oil and gas value chain to drive rapid, meaningful methane and flaring emissions reductions from their assets in a transparent and verifiable manner.



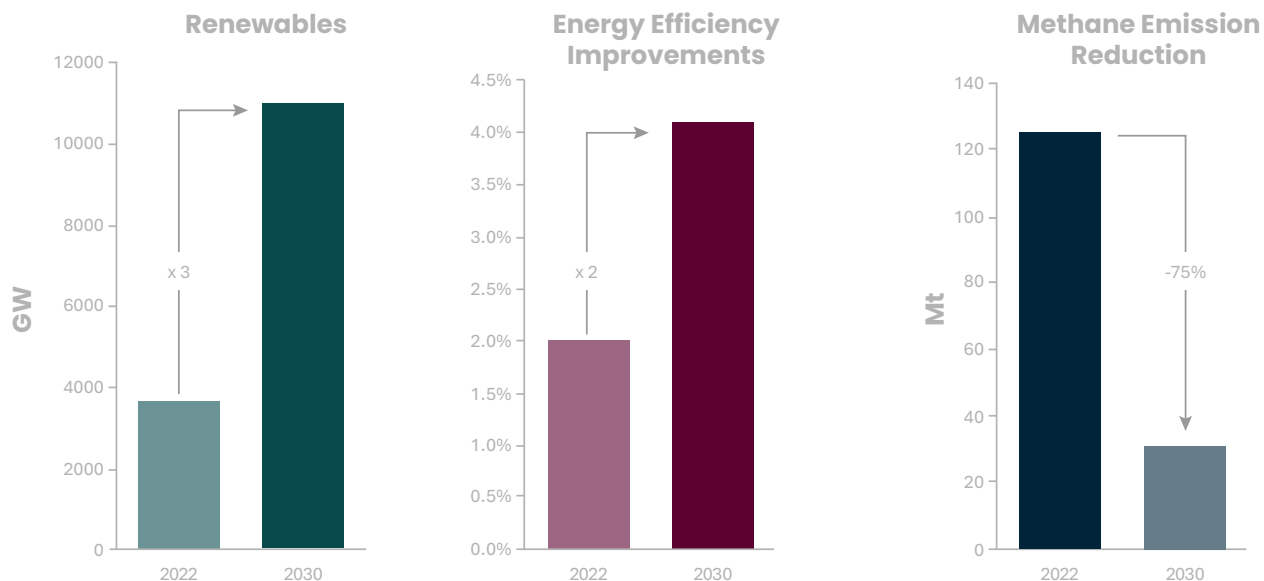
¹⁵ International Capital Market Association, *Sustainable Finance* (Zurich: ICMA, 2025), <https://www.icmagroup.org/sustainable-finance/>.

¹⁶ International Capital Market Association, *Green Bond Principles*, (Zurich: ICMA, 2024), <https://www.icmagroup.org/sustainable-finance/the-principles-guidelines-and-handbooks/green-bond-principles-gbp/>.

THE CASE FOR USING THE DEBT CAPITAL MARKETS TO FACILITATE METHANE ABATEMENT

2.1 The NZE remains the primary reference scenario for global investors focused on reducing the climate warming impacts of their portfolios. Aiming for a net zero economy has been cited as an imperative by global investors, financial institutions, companies, and sovereign governments.

Figure 4: Global Renewable Power Capacity, Primary Energy Intensity Improvements, and Energy Sector Methane Emissions in the NZE Scenario



Many companies across finance and oil and gas have set net zero emissions by 2050 targets. The IEA NZE provides guidance to achieve net zero greenhouse gas emissions by 2050 in line with the goals set by the Paris Agreement, which aims to limit global warming to 1.5 °C above pre-industrial levels.

To stay on this pathway, the IEA lists several actions that must be taken by 2030 for the global energy sector to achieve net zero emissions by 2050. Central among them is a 75% reduction in methane emissions from the oil and gas sector. The IEA considers this level of methane reduction to be as vital as tripling renewables-based electricity generation, doubling the rate of energy efficiency improvements, and making considerable increases in electrification.¹⁷

Put more simply, achieving an economy-wide net zero emissions goal in line with the Paris Agreement is impossible without drastic methane cuts across the energy sector. No matter the scenario, mitigating methane and flaring emissions is one of the fastest and most cost-effective ways to mitigate warming in the near term. The imperative is therefore on the oil and gas sector to deploy the capital to undertake this work, with the support of their capital providers.¹⁸

¹⁷ International Energy Agency, *Net Zero Roadmap: A Global Pathway to Keep the 1.5 °C Goal in Reach*, (Paris: IEA, 2023), <https://www.iea.org/reports/net-zero-roadmap-a-global-pathway-to-keep-the-15-0c-goal-in-reach>, 108, License: CC BY 4.0.

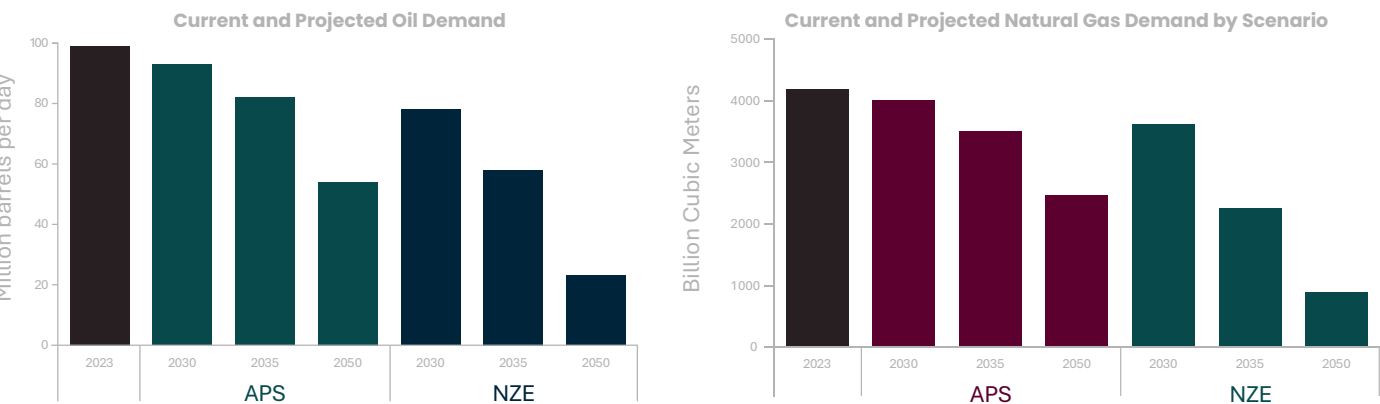
¹⁸ Ibid.

2.2 In addition to the potential climate impact, there is an economic case to reduce emissions.

Addressing methane and flaring emissions is a cost-effective opportunity for oil and gas companies to reduce their climate impact, which could strengthen competitiveness and create value.

While a considerable amount of oil and gas will likely be produced and consumed in the next decade, even under the most aggressive net-zero scenario, the industry’s role as a constructive partner in the energy transition may rest on how proactively it reduces its own emissions. The industry and its financial backers should therefore ensure that any oil and gas consumed is produced with near-zero scope 1 and 2 emissions (see Figure 5).^{19 20}

Figure 5: Oil and Gas Demand Under NZE and Announced Pledges Scenario (APS) Scenarios²¹



Beyond the long-term demand shown in these scenarios, immediate regulatory pressures are creating a powerful incentive for companies to reduce production emissions. The recent proliferation of methane regulations and advancing import standards in Europe and Asia means that taking action now can prepare companies for future compliance and help maintain access to key export markets.²²

Furthermore, strong methane management is increasingly recognized as a key indicator of operational excellence, asset reliability, and process safety. Recognizing these value drivers, many in the financial sector, including insurers,²³ banks,^{24 25} and asset managers,²⁶ are beginning to consider minimum methane performance standards in their capital allocation decisions.

¹⁹ According to the IEA's *World Energy Outlook 2024*, oil demand in the NZE scenario is expected to be around 78 million barrels per day (b/d) by 2030 and almost 58 million b/d by 2035 (versus 99 million b/d in 2023). The IEA's latest *World Energy Outlook (WEO)* foresees natural gas demand at 3617 billion cubic meters (bcm) by 2030 and 2257 bcm by 2035 under the NZE scenario versus 4186 bcm in 2023. Under the IEA's APS model, which assumes that all national energy and climate targets made by governments, including net zero goals, are met in full and on time, oil and gas demand are expected to be 9% and 4% lower respectively by 2030 compared to 2023 levels. For a discussion about oil and gas demand under different decarbonization scenarios including NZE, see International Energy Agency, *World Energy Outlook 2024*, (Paris: IEA, 2024), <https://www.iea.org/reports/world-energy-outlook-2024>, License: CC BY 4.0 (report); CC BY NC SA 4.0 (Annex A).

²⁰ This is according to OGMP 2.0, which refers to the "near-zero" emission intensity of the Oil and Gas Climate Initiative (OGCI) collective average target for upstream operations of 0.25% by 2025.

²¹ International Energy Agency, *World Energy Outlook 2024*.

²² Environmental Defense Fund, "EU's new landmark climate legislation clamps down on methane emissions from energy imports," *EDF Europe*, November 15, 2023, <https://www.edfeurope.org/news/2023/15/11/eus-new-landmark-climate-legislation-clamps-down-methane-emissions-energy-imports>.

²³ Chubb, *Corporate Climate Underwriting Criteria for High-Emitting Industries*, <https://about.chubb.com/content/dam/chubb-sites/chubb/about-chubb/citizenship/environment/pdf/chubb-corporate-climate-underwriting-criteria-for-high-emitting-industries.pdf>.

²⁴ Gissell Lopez and Ben Ratner, *The Methane Emissions Opportunity: Our Perspective on Leveraging Technology in Continuous Improvement in the Oil & Gas Sector* (JPMorgan Chase & Co., 2024), https://www.jpmorgan.com/content/dam/jpm/cib/complex/content/redesign-custom-builds/carbon-compass/JPMC_methane.pdf.

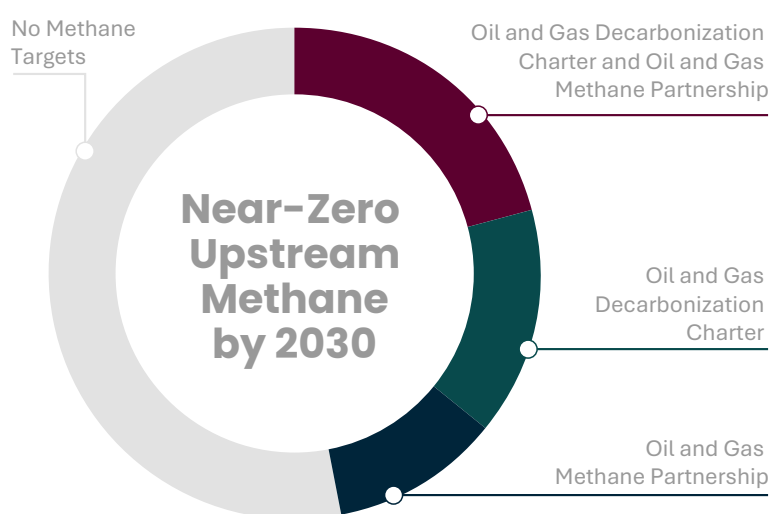
²⁵ Standard Chartered, "Commitment to reducing methane emissions" <https://www.sc.com/en/press-release/commitment-to-reducing-methane-emissions/>.

²⁶ Legal & General Investment Management, *LGIM Climate Impact Pledge: Oil & Gas Sector Guide*, (London: LGIM, 2022), <https://cms.lgim.com/globalassets/lgim/document-library/responsible-investing/oil-and-gas-climate-impact-pledge-sector-guides.pdf>.

2.3 Converting commitments into cuts requires capital deployment, which may impact financing decisions for capital seekers.

Voluntary corporate and sovereign commitments on methane and flaring have played an important role, not only in raising awareness of the topic but also in underlining the relative affordability of these emission cuts compared to other sectors. To date, industry pledges to achieve near-zero upstream methane emissions by 2030 cover just under half of global oil and gas production. This includes recent commitments under the OGDC, the United Nations Environment Programme's (UNEP) Oil and Gas Methane Partnership (OGMP) 2.0, and the Oil and Gas Climate Initiative's (OGCI's) Aiming for Zero initiative (see Figure 6).

Figure 6: Coverage of Global Oil and Gas Production by Near-Zero Methane Commitments²⁷



Though laudable, voluntary commitments are often unenforceable, unverifiable, and prone to becoming (or may already be) unfunded mandates within companies. This guidance seeks to answer the question, “How can we facilitate the capital deployment to transform ambition into action?”

²⁷ International Energy Agency, World Energy Outlook 2024.





3

THE OPPORTUNITIES AND CHALLENGES FOR DEBT CAPITAL MARKETS

3.1 The deployment of capital is a major hurdle between pledges and reductions in the real economy.

Whether they consider themselves to be climate-aligned or not, most capital providers would agree that monetizing a waste stream and improving underlying asset integrity can be beneficial for invested capital. Given the favorable economics of abatement interventions, rising global energy demand, and global policy tailwinds, there is a clear value proposition for capital providers and capital seekers. Their shared goals include monetizing valuable natural resources, reducing reputational and regulatory risks, improving operational safety, protecting access to global import markets, and mitigating transition risks. For these reasons, methane emissions mitigation should be included in routine debt financing for the sector, either via labeled or unlabeled debt.

Because methane emissions reductions are not a baseline expectation for debt transactions across markets, the Working Group has considered the track record of the GSSS bond and loan market in requesting specific changes through the use of indentures, covenants, and other provisions. As of November 2024, the oil and gas sector has more than \$3.2 trillion in disclosed outstanding debt, yet this funding typically comes with no conditions or requirements related to climate emissions performance.²⁸

Whether they consider themselves to be climate-aligned or not, most capital providers would agree that monetizing a waste stream and improving underlying asset integrity can be beneficial for invested capital.

²⁸ Center on Global Energy Policy, *A Roadmap to Catalyze Methane Abatement in the Oil and Gas Sector Using Debt Financing* (New York: Columbia University, 2025), based on data from Bloomberg L.P., accessed June 2025.

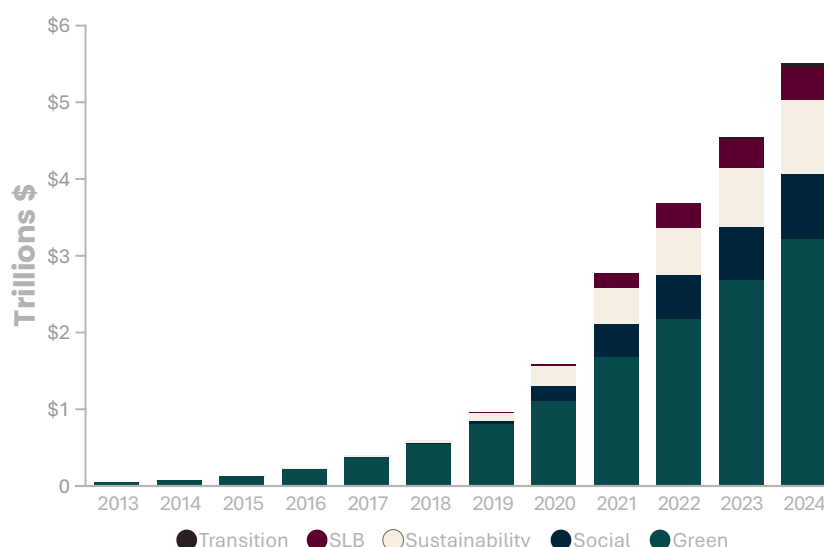
3.2 Driving methane abatement through the GSSS debt market is a pivotal strategy for deploying capital toward decarbonization efforts in the oil and gas sector.

GSSS markets have already been pivotal in encouraging the deployment of capital toward decarbonization efforts in many high-emitting sectors, including power generation, heavy industry, and infrastructure. The ICMA-administered GSSS Bond Principles and the Climate Transition Finance Handbook have helped lower greenwashing risks and provided assurance to investors through their recommendations for annual reporting, along with pre-issuance and post-issuance external verifications.²⁹

This Guidance provides a technical basis for the inclusion of methane emissions abatement activities into existing recommendations from ICMA, taking past market successes and the specific challenges of this sector into account. By adapting thematic or labeled instruments to include specific features targeting flaring and methane emission reduction, the goal is for the market to move quickly to facilitate transactions that prioritize spending on methane abatement.

Labeled instruments can benefit capital seekers and capital providers alike while mitigating externalities. The benefits to capital seekers include engagement with a range of new investors, which can lead to greater price stability, the potential to increase the volume of financing, and, in some cases, lower the cost of capital. The benefits to investors include greater transparency on risk mitigation and investing in alignment with client and beneficiary priorities in line with fiduciary duty. Transparency can also provide greater assurance around governance, asset integrity, and climate or other social commitments.

Figure 7: Cumulative Thematic Bond Issuance by Type (Trillion USD)³⁰



Despite their success in other industries, the use of GSSS instruments in the oil and gas sector has been low due to a variety of challenges. Accordingly, the Working Group set out to propose guidelines that encourage assurance that KPIs are set for, and proceeds are allocated to, projects with sound economics, demonstrable emission reductions, and practical feasibility.

²⁹ International Capital Market Association, *Green Bond Principles: Voluntary Process Guidelines for Issuing Green Bonds* (Zurich: ICMA, 2022), <https://www.icmagroup.org/assets/documents/Sustainable-finance/2022-updates/Green-Bond-Principles-June-2022-060623.pdf>.

³⁰ Figure created based on data from the Bloomberg Terminal, accessed June 2025.

3.3 Main challenges discussed in the Working Group, which are addressed through the Guidance.

Through hundreds of consultations with more than 100 capital providers over 16 months, Working Group participants discussed the most prominent challenges and collaborated to incorporate possible solutions into the Guidance, as outlined in the tables below.

Table 1: Challenges for Capital Providers and Corresponding Guidance Considerations



Capital Providers

Financial Institutions, including banks, financial asset managers, and financial asset owners

| Challenges | Considerations Reflected in the Guidance |
|---|---|
| The oil and gas sector has struggled to convey credibility of emissions reductions to investors. | Establishing a science-based consensus around technical recommendations is critical for marketed securities. The Guidance was developed using the expertise of the Technical Working Group, which comprises climate scientists, methane policy experts and oil and gas emissions engineers. The group developed recommendations for performance targets, performance indicators, qualifying activities, data quality, auditing, and verification. |
| Heterogeneity of the sector (jurisdiction, structure, capitalization, and value chain position) makes overarching performance baselines difficult. | The Guidance provides flexibility for the range of sizes, credit quality, governance arrangements, balance sheet considerations, technical capabilities, and liquidity that exist across the sector. The Guidance asks capital seekers to consider the most ambitious program, based on what is feasible at their starting position. |
| Greenwashing concerns regarding the likelihood that providing the oil and gas industry a lower cost of capital could lead to additional production activities. | <p>The savings on interest expense are unlikely to reach the levels required for meaningful new exploration and production, given that the capital required to address methane is relatively low compared to the total debt of the oil and gas sector. The total estimated amount of financing needed for methane abatement in the oil and gas sector is around \$175–\$200 billion. In comparison, the total debt of the sector is around \$3.2 trillion, based on Bloomberg data.</p> <p>However, the Guidance recognizes this risk and outlines several mitigants and guardrails, including the prioritization of capital deployment for activities with limited emissions lock-in risk. The Guidance for use of proceeds is further limited to existing fields.</p> |
| The perception of greenwashing associated with naming conventions is a concern for stakeholders. | It is up to the individual investor to determine if the scale and ambition of what each capital seeker puts forth meets their investment criteria. Investors will assess whether they are being adequately compensated for the risks they are taking in any transaction. The Guidance serves as a benchmark against which investors and third parties can evaluate the ambition of any given transaction. |

TABLE CONTINUES >

| Challenges | Considerations Reflected in the Guidance |
|--|---|
| <p>The total capital required for methane emission projects may not reach benchmark size for UoP bond transactions (typically \$500 million and above).</p> | <p>Methane and flaring abatement should be viewed as one part of a company’s broader emissions reduction pathway. Frameworks for bonds, loans, and project finance can consider scaling their emissions reduction programs to include other projects, such as electrification, energy efficiency, and renewables deployment to reach the level of financing sought by the capital seeker, across all emission scopes.</p> <p>The total cost of a company’s methane mitigation capital plan may be less than the typical size of a benchmark bond. To maximize GHG reductions and impact, a UoP bond should encompass multiple GHG emissions reduction activities, with methane and flaring mitigation included as key components. This guidance serves to suggest a level of transparency investors would expect for methane mitigation-related activities, as part of a comprehensive scope 1 and 2 reduction program.</p> <p>Drawing from utility markets that have adopted similar approaches in the past, the focus should be on creating large, liquid, simple, and easily understandable instruments to maintain market appeal and avoid complicating instrument structures.</p> <p>However, many differing or novel structures may serve this purpose. For example, an issuer may choose a smaller, shorter-dated UoP tranche specifically for emissions-reduction-related expenditures, while issuing longer-dated, larger size KPI-linked structures. This approach addresses size and scale challenges in bond issuance, enhances scalability, and provides an additional layer of assurance on the KPI-linked tranche. In other words, the UoP tranche could indicate capital is being deployed in service of reaching the Issuer’s SPTs and KPIs in the KPI-linked tranche.</p> <p>Ultimately, it is up to the capital seeker and their bankers to determine the most suitable structure.</p> |
| <p>Methane emissions data quality is unreliable and inconsistent. Improving data quality takes time. This may be a challenge for KPI-linked mechanisms when establishing a baseline for performance-based interest-rate triggers.</p> | <p>The Guidance favors emissions KPIs that rely on high-quality, measurement-based emissions data. However, methane emissions data quality is poor across the majority of industry. Therefore, the Guidance for KPI-linked instruments proposes a methodology for establishing an emissions baseline concurrently with implementing “no regrets” operational best practices and fixes.</p> <p>Where capital seekers lack sufficiently robust methane emissions data, they are encouraged to commit to improving data quality over time and to consider a selection of material “activity-based” performance targets and KPIs with easily auditable and verifiable operating procedures.</p> <p>Coupling short-term standard operating procedures and “no regrets” fixes with a long-term strategy to establish a more tailored measurement-based mitigation plan offers several advantages:</p> <ul style="list-style-type: none"> • Stakeholders can have confidence that near-term reductions are being achieved, while longer-term efforts to quantify and reduce emissions using measurement-based inventories are being implemented. • Triggers to interest rate changes would be based on easily verifiable activities or high-quality emissions data, rather than progress against a low-quality baseline. • The potential for baseline “gaming” is reduced by permitting the inclusion of abated methane and flaring emissions during the baselining exercise. |

TABLE CONTINUES >

| Challenges | Considerations Reflected in the Guidance |
|--|--|
| Many GSSS industry standard auditors, second party opinion (SPO) providers, and other external third parties may not currently have the technical expertise to appropriately assess either the ambition or implementation of oil and gas methane emissions programs. | <p>The Working Group has identified a list of criteria for technical experts who would be able to provide SPOs, verification, and assurance for both quantitative and qualitative measures.</p> <p>Additionally, by centering “activity-based” KPIs (e.g., leak detection and repair, equipment replacement), the Guidance suggests targets that are easily audited by a wide range of potential parties, provided they can demonstrate the relevant skills and expertise for a robust and credible external review.</p> |
| Every institution has its own interpretation of how the recommendations set out by the IEA’s NZE scenario should or should not factor into investment decisions, while company decarbonization strategies vary broadly. | The member organizations of the Working Group acknowledge that recommendations in the Guidance are necessary, but not sufficient, for the oil and gas industry to meet the entirety of the IEA’s NZE scenario recommendations for the sector. Any suggestion otherwise by an external party or within a transaction itself is a misrepresentation of this project’s scope. The scope of this Guidance is to specifically target production emissions from supply. In order for the world to meet the recommendations of the NZE, both methane emissions and global demand for oil and gas must decrease. |

As of November 2024, the oil and gas sector has more than \$3.2 trillion in disclosed outstanding debt, yet this funding typically comes with no conditions related to climate performance.





Table 2: Characteristics and Financial Considerations for Different Capital Seeker Types



Capital Seekers

Financing and capital allocation strategies within the oil and gas industry are significantly influenced by their structural and operational characteristics. The various capital seekers, NOCs, IOCs, independent operators, Oilfield Services Companies (OFSCs), incorporated joint ventures, and other parts of the value chain, each have unique challenges that will require unique strategies.

| Capital Seeker Types | Considerations in the Guidance |
|--|---|
| <p>National Oil Companies</p> <p>NOCs often align their capital allocation strategies with national priorities, such as enhancing energy security, creating jobs, and generating government revenue. These companies possess diverse financial structures, varying levels of creditworthiness, and differing levels of access to global capital markets—all of which influence their ability to fund initiatives such as methane abatement or other low-carbon investments.</p> | <p>Given the NOCs’ large share of global oil and gas production, they can play a pivotal role in reducing methane emissions. Though NOCs have around \$1 trillion in debt outstanding—double the amount of IOC majors—they have broadly not tapped the GSSS market and many may be in early stages of their methane mitigation programs.³¹</p> |
| <p>International Oil Companies</p> <p>IOCs, which are privately owned and include the “majors,” operate across the value chain and focus primarily on maximizing profits and generating shareholder returns. After years of poor equity returns, oil and gas companies have faced pressure to maintain profitability and capital discipline. Consequently, much of their recent cash windfalls have been directed toward reducing debt, paying dividends, and repurchasing stocks.³²</p> | <p>Oil majors may not have incentives to seek GSSS debt financing given their strong cash position. However, IOCs can influence strategies at their non-operated assets, which account for, on average, 50% of their equity production and are often operated by NOCs or NOC-owned entities.³³ An IOC’s participation in OGCI, OGDC, and OGMP 2.0 is a promising step toward sharing best practices and potential capital for methane abatement projects with NOCs and others in the sector.</p> |

TABLE CONTINUES >

³¹ Howell, Andrew, and Pavel Laberko. “Can Investors Spur National Oil Companies toward Methane Action?” *World Economic Forum*, 25 July 2024, www.weforum.org/stories/2024/07/can-investors-spur-national-oil-companies-toward-methane-action/.

³² Gautam Jain and Luisa Palacios, “Investing in Oil and Gas Transition Assets En Route to Net Zero,” (New York: Center on Global Energy Policy, Columbia University, 2023), <https://www.energypolicy.columbia.edu/publications/investing-in-oil-and-gas-transition-assets-en-route-to-net-zero/>.

³³ Environmental Defense Fund, *The Methane Emissions Challenge for Joint Venture Operations*, (New York: EDF, 2023), <https://business.edf.org/insights/joint-venture-ioc-noc-methane-emissions/>.

| Capital Seeker Types | Considerations in the Guidance |
|---|--|
| <p>Independent E&Ps</p> <p>Exploration and production (E&P) companies are usually smaller regional companies that specialize in certain markets or resources and in primarily upstream activities.³⁴ These companies require significant funds for drilling, extracting, processing, and transporting oil and gas. Most independents lack the liquidity to finance these activities internally and often rely on third-party financing, such as reserve-based credit facilities. These loans are secured by proven oil and gas reserves, with borrowing capacity adjusted based on reserve values. However, in times of price declines, the value of these reserves drops, potentially reducing borrowing limits, triggering liquidity crises, or requiring additional collateral or debt repayment.³⁵</p> | <p>This challenge is compounded by the fact that some global banks are increasingly moving away from financing the oil and gas sector to align with climate commitments, further straining lending facilities for independent E&P companies.</p> <p>Given the current financing landscape, independent E&Ps could consider any financing option—whether explicitly labeled or not—that incorporates methane abatement goals and complies with stringent yet practical covenants to secure necessary funding.</p> |
| <p>Oil Field Service Companies</p> <p>OFSCs are specialized firms that support the oil and gas industry by providing equipment, technologies, and expertise necessary for exploration, extraction, and production operations.³⁶</p> | <p>OFSCs are critical to scale the availability of equipment and services to detect, measure, and mitigate methane emissions. They have global presence and can transfer technology and expertise to NOCs and independent E&Ps.</p> |

³⁴ Library of Congress, *Oil and Gas Industry: A Research Guide*, (Washington, D.C.: Library of Congress), <https://guides.loc.gov/oil-and-gas-industry/companies>.

³⁵ Bradford J. Sandler, “Distressed Investor Considerations in E&P Oil and Gas Restructurings,” *Practical Law* (Thomson Reuters, 2023), https://www.psziaw.com/wp-content/uploads/2023/03/593_Distressed-Investor-Considerations-in-EAndP-Oil-and-Gas-Restructurings.pdf

³⁶ Saud Al-Fattah, “The Role of National and International Oil Companies in the Petroleum Industry,” *USAEE Working Paper No. 13-137*, January 27, 2013, <https://ssrn.com/abstract=2299878>.



4

GUIDANCE FOR INCLUDING METHANE ABATEMENT ACTIVITIES IN OIL AND GAS DEBT STRUCTURING

In the context outlined above, the Working Group proposes technical guidance that puts forward highly ambitious, science-based KPIs for companies to pursue and, in parallel, offers guardrails that give investors an opportunity to actively drive emissions reductions.

Guidance: Use-of-Proceeds Instruments

Guidance: KPI-Linked Instruments



Introduction

Guidance: Use-of-Proceeds Instruments

Guidance: KPI-Linked Instruments





Guidance for Including Methane and Flaring Abatement in Use of Proceeds Instruments

1. Introduction

2. Defining Qualifying Methane and Flaring Abatement Projects and Activities

3. Quantification and Reporting of Environmental Benefits

4. External Review and Verification

Introduction

Guidance: Use-of-Proceeds Instruments

Guidance: KPI-Linked Instruments



1 INTRODUCTION

The **Guidance for Including Methane Abatement in Use of Proceeds (UoP) Instruments** (the Guidance) is the product of the **Methane Finance Working Group** (the Working Group), a collaborative effort between industry, finance, and civil society. The recommendations are presented as non-binding and non-exhaustive. For more on the participants, process, and rationale for the development of this Guidance, please see supporting research to this document: [A Roadmap to Catalyze Methane Abatement in the Oil and Gas Sector Using Debt Financing](#).

Following the overarching principles set forth by the International Capital Markets Association³⁷ (ICMA) in their capacity as the Secretariat for the Green Bond Principles (GBP) and Sustainability Bond Guidelines (SBG),³⁸ the Guidance offers recommendations to capital seekers in the oil and gas value chain, their capital providers, and other stakeholders toward the incorporation of methane abatement activities into UoP bonds, loans, or other financial instruments. The Guidance seeks to accelerate the deployment of capital to address methane emissions abatement in oil and gas production.

UoP instruments are designed to direct capital raised exclusively toward prespecified types of projects and activities that meet criteria set out in a “Framework.”³⁹ Key performance indicator (KPI)-linked instruments, in which capital seekers set enterprise-level targets as part of a general corporate purpose capital raise, can be considered as complementary to UoP instruments, as detailed in this document. For recommendations from the Working Group on the use of KPI-linked instruments for methane reductions, please see: [Guidance for Including Methane and Flaring Abatement in KPI-Linked Instruments](#).

The Guidance is tailored to addressing emissions from the upstream segment of the oil and gas supply chain, which includes production (such as drilling and completions), gathering, boosting, and processing. This segment is where the majority of the sector’s methane and flaring emissions are concentrated.^{40 41 42} However, there is potential applicability of certain activities for other segments of the value chain that employ similar processes for abatement. Future in-depth guidance may be provided specifically for transmission, compression, storage, liquefaction, shipping, and regasification. The Guidance covers CH₄ production emissions, as well as CO₂ emissions from flaring.⁴³ Mitigating these sources of emissions should be addressed in any capital program to reduce scope 1 and 2 emissions.

Ultimately, it is at the capital provider’s discretion to participate in any transaction that references the Guidance. It is at the capital provider’s discretion to decide if an abatement program or project is ambitious enough relative to its policies and its fiduciary duty. The Guidance is offered as a roadmap to help capital seekers clearly convey their ambition and impact to all stakeholders. The Guidance is offered as a roadmap to help capital seekers clearly convey their ambition and impact to all stakeholders on methane and flaring abatement as one piece of a broader energy transition strategy.

³⁷ International Capital Market Association, *Sustainable Finance*.

³⁸ International Capital Market Association, *Green Bond Principles (GBP)* (Zurich: ICMA, 2025), <https://www.icmagroup.org/sustainable-finance/the-principles-guidelines-and-handbooks/green-bond-principles-gbp/>.

³⁹ International Capital Market Association, *Green Bond Principles: Voluntary Process Guidelines for Issuing Green Bonds* (Zurich: ICMA, 2022), <https://www.icmagroup.org/assets/documents/Sustainable-finance/2022-updates/Green-Bond-Principles-June-2022-060623.pdf>.

⁴⁰ Ramón A. Alvarez et al., “Assessment of methane emissions from the U.S. oil and gas supply chain,” *Science* 361, no. 6398 (2018): 186–88, <https://www.science.org/doi/10.1126/science.aar7204>.

⁴¹ Joannes D. Maasakkers et al., “A large increase in US oil and gas methane emissions derived from satellite observations (2010–2019),” *Nature Communications* 14, no. 5048 (2023), <https://www.nature.com/articles/s41467-023-40671-6>.

⁴² Katlyn MacKay, Scott P. Seymour, Hugh Z. Li, Daniel Zavala-Araiza, and Donglai Xie, “A Comprehensive Integration and Synthesis of Methane Emissions from Canada’s Oil and Gas Value Chain,” *Environmental Science & Technology* 58, no. 32 (2024): 14203–14213, <https://doi.org/10.1021/acs.est.4c03651>.

⁴³ Emissions from subsequent combustion of captured methane are not included as they are not deemed to be material to the net emissions reduction benefit. Not accounting for the potential to offset any supply, over 20 years the gain in terms of reduced CO₂ impact from burning 1 mole of CH₄ rather than allowing it to leak is approximately 96.8%. Over 100 years the gain in terms of reduced CO₂ impact from burning 1 mole of CH₄ rather than allowing it to leak is approximately 90.2%.

2.1 Guiding Principles

Recommendations in the Guidance are voluntary process guidelines to promote transparency, ambition, and integrity in the development of financial instruments with environmental benefits. In support of these aims, this Guidance has been adapted specifically to include methane and flaring abatement activities in UoP instruments, following overarching guidance from ICMA. **It is recommended that capital seekers follow the Guiding Principles below in accordance with ICMA's GBP, to the extent applicable for their sector.**

- Capital seekers should have or develop a corporate or sovereign-level commitment to reduce overall scope 1 and 2 emissions and demonstrate that funds raised through UoP instruments contribute to a broader decarbonization strategy.⁴⁴
- Project activities should result in substantial, measurable, and durable emission reductions, including both methane and other greenhouse gases (GHGs), measured on both a near-term (20-year) and longer-term (100-year) basis. The impact of emissions reduction on all proposed projects should be quantifiable, based on the best available evidence and, at a minimum, consistent with Level 2 in Table 2 (see Sections 2.2, 3.1, and 3.2).
- Capital seekers should pursue projects that would deliver the most complete emissions reductions possible per source or mitigation project. Projects that will only achieve partial methane abatement of a targeted source or group of sources are recommended only in the following circumstances (see Section 2.2):
 - As supporting activities to a complete abatement project;
 - As a temporary solution until a project with higher abatement potential can be implemented; or
 - As a standalone solution, only if the project is deemed the most effective option, where complete abatement is cost-prohibitive or technically infeasible.
- Abatement measures should ensure the permanence of emissions reductions. Emission reductions must be regularly verified, and procedures should be in place to quickly rectify disruptions to their effectiveness (see Sections 2.2 and 4.3).⁴⁵
- Project activities should ensure that any resulting emissions outside the project boundary do not materially dilute achieved emission reductions within the project boundary. Capital seekers are recommended to assess and document any indirect emissions impacts resulting from their project activities (see Sections 3.1 and 3.2).
- Proposed projects should minimize the risk of carbon lock-in. Infrastructure investments and efficiency upgrades should aim to limit prolonging the use of oil and gas assets, which may delay the transition to low-carbon alternatives.⁴⁶ Assessment of this risk should be appropriately weighted against the more immediate benefits of methane and flaring abatement (see Sections 2.2, 3.1 and 3.2).
- Projects may support emission reduction efforts in fields where the operator is already producing, but should not be used to support the development of new oil and gas fields. Newer operations typically have fewer emissions sources and less need for capital spending on retrofits or infrastructure upgrades.^{47 48} Further, greenfield assets that are developed should be low- or no-emission by design and should not be encouraged to tap capital markets for emissions abatement.

- Capital seekers should provide investors with assurance regarding the ambition and authenticity of their approach, as this will, in part, guide how transactions are perceived in the market. Therefore, capital seekers should minimize misalignment between publicly stated climate ambitions and engagement with policymakers. Capital seekers are encouraged to follow the approach outlined in the We Mean Business Responsible Policy Engagement corporate advocacy guidance document.⁴⁹
- The Guidance recommends that capital seekers adhere to industry-standard health and safety risk mitigation frameworks and best practices, potentially including the International Association of Oil & Gas Producers' (IOGP) Reports 456,⁵⁰ 415,⁵² and 510⁵¹ or other equivalent protocols. These documents encourage companies to implement and disclose process safety and asset integrity KPIs at both the corporate and facility level through a process of continuous improvement. In addition, this Guidance strongly encourages capital seekers to conduct risk analyses and training for new processes or equipment and to describe any unique process, health, or safety risks arising from their planned methane and flaring mitigation efforts, along with the strategies to mitigate them.



⁴⁴ To maximize GHG reductions, a use of proceeds bond or loan may include multiple GHG emissions reduction activities, including but not limited to methane and flaring abatement. Methane and flaring emissions typically encompass numerous small and dispersed sources. Bundling multiple mitigation projects and activities into a single, cohesive abatement program, including flaring abatement and other CO₂ reduction activities, can help capital seekers achieve benchmark-size bond market transactions and strengthen the impact of the mitigation program.

⁴⁵ Greenhouse Gas Management Institute and Stockholm Environment Institute, "Permanence," in *The Carbon Offset Guide* (Washington, D.C. and Stockholm: Greenhouse Gas Management Institute and Stockholm Environment Institute, 2025), <https://offsetguide.org/high-quality-offsets/permanence/>.

⁴⁶ Supply-side carbon lock-in, as defined here, has been explored in detail in the literature, including Unruh (2000), Heras (2024), Seto et al. (2016), and Erickson et al. (2015). These studies describe how supply-side lock-in occurs through infrastructural, institutional, and economic mechanisms that perpetuate reliance on fossil fuels.

⁴⁷ Xiao Lu et al., "Observation-derived 2010–2019 trends in methane emissions and intensities from US oil and gas fields tied to activity metrics," *Proceedings of the National Academy of Sciences* 120, no. 12 (2023), <https://www.pnas.org/doi/10.1073/pnas.2217900120>.

⁴⁸ Felipe J. Cardoso-Saldaña, "Tiered Leak Detection and Repair Programs at Simulated Oil and Gas Production Facilities: Increasing Emission Reduction by Targeting High-Emitting Sources," *Environmental Science & Technology* 57, no. 19 (2023): 7382–7390, <https://pubs.acs.org/doi/10.1021/acs.est.2c08582>.

⁴⁹ We Mean Business Coalition. Corporate Climate Policy Engagement Reporting Template. February 10, 2025, We Mean Business Coalition, <https://www.wemeanbusinesscoalition.org/wp-content/uploads/2025/02/WMBC-Corporate-Advocacy-Template.pdf>.

⁵⁰ International Association of Oil & Gas Producers, *Process safety – Recommended practice on key performance indicators*, IOGP Report 456 (London: IOGP, 2011), <https://www.iogp.org/bookstore/product/process-safety-recommended-practice-on-key-performance-indicators/>.

⁵¹ International Association of Oil & Gas Producers. Operating Management System Framework for Controlling Risk and Delivering High Performance in the Oil and Gas Industry. Report No. 510, June 24, 2014. IOGP, <https://www.iogp.org/bookstore/product/operating-management-system-framework-for-controlling-risk-and-delivering-high-performance-in-the-oil-and-gas-industry/>.

⁵² International Association of Oil & Gas Producers (IOGP). Asset Integrity: The Key to Managing Major Incident Risks. Report 415, June 2024. <https://www.iogp.org/bookstore/product/asset-integrity-the-key-to-managing-major-incident-risks/>.



2.2 Selecting Methane and Flaring Abatement Projects and Activities

The table below ([Table 1](#)) presents an illustrative, non-exhaustive list of potential methane sources and abatement projects that should align with the principles outlined in [Section 2.1](#) when executed as intended. Projects that do not appear in [Table 1](#) but still meet the recommended principles in [Section 2.1](#) may still be considered by capital seekers.

Proceeds may support both capital expenditure and operational expenditure projects that directly drive reductions, as well as expenditures that may indirectly support abatement, including:

- Employing staff;
- Licensing software or other back-end related infrastructure;
- Retaining independent experts or consultants;
- Contracting with third-party firms for auditing or certification;
- Providing training and capacity building for staff; and
- Undertaking pilot projects, scientific, engineering, and feasibility studies.

The Guidance recognizes that the technical and economic feasibility, as well as the effectiveness and associated risks of each abatement activity, may vary significantly by country, operator, project, and facility. Differences in historical industry practices, the integrity of legacy infrastructure, and regulatory and institutional frameworks can influence the effectiveness of certain abatement measures. **Accordingly, capital seekers are recommended to seek additional consultation or to undertake their own due diligence to select the most fit-for-purpose and effective abatement solution for their specific emission sources.** For additional guidance, see [Section 3.1](#), [Section 4.1](#), and [Section 4.2](#).

The table below lists possible emission reduction measures that capital seekers might undertake, with each activity assessed against its potential carbon lock-in risk, permanence of emissions reductions, and completeness of emissions reductions. It is recommended that capital seekers prioritize projects with limited lock-in risk, high permanence, and completeness. However, this table is not meant as an exclusionary categorization but rather as guidance on prioritization to help select projects appropriately suited to operational circumstances that will lead to the greatest emission reductions.

- **Limited Lock-in Risk (YES):** This designation applies to projects with a low risk of “carbon lock-in”—that is, projects that do not substantially prolong the use of high-emitting assets in a way that would delay a transition to low-carbon alternatives. The greatest risk of lock-in comes from capital-intensive projects that promote an increase in oil and gas production or require new, long-lived infrastructure (e.g., pipelines, processing facilities) with significant payback periods. However, capital seekers should weigh the risk of carbon lock-in against the immediate climate benefits of methane and flaring abatement. If lock-in risks are deemed significant, capital seekers should quantify and explain in detail the net GHG benefit of the project across all scopes.
- **Permanence (YES):** This designation applies to projects that provide permanent, long-term, and durable emissions reductions by design or with regular monitoring.⁵³ Permanence is typically achieved when:
 - The project fundamentally leads to emissions reduction by design (e.g., emitting equipment is replaced with low- or non-emitting equipment), or
 - Emissions reductions from the project are regularly monitored according to a plan that specifies the:
 - + Types of data and information to be reported;
 - + Origin of the data;
 - + Monitoring methodologies;
 - + Monitoring frequencies and periods;
 - + Information management systems where data is located and retained; and
 - + Calibration requirements for any monitoring and measurement equipment used.
- **Permanence (NO):** This designation applies to projects that do not provide permanent, long-term, and durable emissions reductions, as they are typically proposed without a strong emphasis on the mechanisms to calculate and monitor their impact reliably.
- **Completeness (YES):** This designation applies to projects that provide complete and immediate methane abatement by design, often coupled with a robust monitoring plan. These typically reduce emissions through one of the following methods:
 - Replacement of emitting equipment with non-emitting or best-in-class equipment for emissions minimization.
 - Removal of an emission source through the installation of new equipment.
 - Elimination of an existing emission source through a documented change in operating procedures.
- **Completeness (NO):** This designation applies to projects that provide partial methane abatement of a source. Examples include:
 - Reducing the impact of an emission source by routing it to a control device.
 - Reducing the impact of an emission source through the installation of new but not best-in-class equipment.
 - Implementing monitoring-only programs that detect, but do not include, an abatement component.
 - Reducing, but not eliminating, emissions from existing sources through a documented change in operating procedures.

As with all voluntary frameworks, it is ultimately at the capital provider’s discretion to participate in any transaction and to decide if an abatement program or project is ambitious enough relative to its emissions reduction standards and targets. The above and below guidance should be viewed as a roadmap for capital seekers to convey their ambition and impact.

⁵³ International Organization for Standardization, ISO 14064-2:2019, Greenhouse gases — Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements (Geneva: ISO, 2019), <https://www.iso.org/standard/66454.html>.

Table 1: Illustration of Potential Sources and Recommended Abatement Activities

| Source | Recommended Abatement Activity | Limited Lock-In Risk | High Permanence | Completeness |
|--|---|----------------------|-----------------|--------------|
| Glycol Dehydrators | Reroute glycol skimmer gas ^{54 55} | YES | YES | NO |
| | Install desiccant dehydrators in place of glycol dehydrators ^{56 57} | YES | YES | YES |
| | Install flash tank separator in the dehydration process to remove the gas absorbed by the glycol in the gas contactor ⁵⁸ | YES | YES | NO |
| | Install vapor recovery units, for emissions to sales or feed gas ⁵⁹ | YES | YES | YES |
| | Optimize circulation rates to reduce gas carryover into the water-saturated glycol stream ⁶⁰ | YES | YES | NO |
| | Replace a glycol dehydrator with a dehydration method that is ventless, such as methanol injection ⁶¹ | YES | YES | YES |
| | Use electric glycol circulation pumps ⁶² | YES | YES | NO |
| Equipment Leaks | Leak Detection and Repair (LDAR) programs using handheld or other advanced methane detection for fugitive emission sources ^{63 64} | YES | YES | NO |
| | Complete preventive maintenance plans to prevent equipment leaks | YES | NO | NO |
| Super-Emitters | Deployment of top-down detection including satellites or overflights | YES | NO | NO |
| Abnormal Process Conditions/ Super-Emitters | Advanced site-level monitoring programs combined with mandatory root cause analysis procedures for detected emission events ⁶⁵ | YES | NO | NO |
| Quantification of Emission Sources | Deployment of quantification studies to determine maximum sources for abatement ⁶⁶ | YES | NO | NO |

TABLE CONTINUES >

Introduction

Guidance: Use-of-Proceeds Instruments

Guidance: KPI-Linked Instruments



| Source | Recommended Abatement Activity | Limited Lock-In Risk | High Permanence | Completeness |
|-------------------|--|----------------------|-----------------|--------------|
| Storage Tanks | Centralize tanks from multiple locations and route products to ventless equipment or equipment equipped with vapor recovery systems | NO | YES | YES |
| | Use a vapor recovery tower to capture vapor and limit flash on atmospheric tanks, and route flash gas to a low-pressure sales line, a production compressor suction, or onsite fuel gas supply ⁶⁷ | YES | YES | YES |
| | Install tankless facilities—design facilities that eliminate the use of tanks | NO | YES | YES |
| | Install pressurized storage tanks, blanket gas ⁶⁸ | YES | YES | NO |
| | Routinely monitor dump valves on upstream separators to make sure they are working properly | YES | NO | NO |
| | Install tank pressure monitoring systems and alarms alerting to over pressuring | YES | NO | NO |
| | Routinely monitor thief hatches and safety valves, such as with an optical gas imaging (OGI) camera, remote camera, or local stationary sensor | YES | NO | NO |
| | Remotely observe tank batteries using integrated operation centers | YES | NO | NO |
| | Use automated tank gauging systems to eliminate need to open thief hatches for routine tank monitoring | YES | NO | NO |
| Liquid Unloadings | Use lifting agents (i.e., foaming agents, soap strings, surfactants, installing velocity tubing, installing gas-lift compressors, installing well pumps, temporary shut-ins to build pressure) that lift wells without ever manually unloading liquids and venting gas to atmosphere | YES | YES | NO |
| | Install plunger lift systems along with additional equipment needed to eliminate atmospheric venting ⁶⁹ | YES | YES | YES |

TABLE CONTINUES >

| Source | Recommended Abatement Activity | Limited Lock-In Risk | High Permanence | Completeness |
|--------------------------------------|---|----------------------|-----------------|--------------|
| Pneumatic Devices | Install non-venting (i.e., no-bleed, electric, mechanical, or instrument air) pneumatic controllers, actuators, and pumps in place of gas-driven pneumatics ^{70 71} | YES | YES | YES |
| | Perform LDAR inspections on gas-driven pneumatic pumps, controllers, and other devices Must also maintain accurate inventory of these devices that is updated annually ⁷² | YES | YES | NO |
| | Route vent streams from gas-driven pneumatic devices to a control device | YES | YES | YES |
| Pipeline Blowdowns | Reroute gas to an existing low-pressure gas system, using existing connections, temporary bypasses, portable compressors, or nitrogen purge gas ⁷³ | YES | YES | YES |
| | Reroute gas that would be vented to atmosphere to fuel | YES | YES | YES |
| | Use pipeline hot-tapping instead of evacuated systems to install new sections of piping or complete repairs ⁷⁴ | YES | YES | YES |
| | Configure isolation valves to minimize the volume of blowdown events ⁷⁵ | YES | YES | NO |
| Pipeline Pig Launching and Receiving | Use vapor recovery units, routing methane to a low-pressure sales line, a production compressor suction, or onsite fuel gas supply | YES | YES | YES |
| | Use vapor recovery units, routing methane to a control device ⁷⁶ | YES | YES | YES |
| | Install in-line pigging ⁷⁷ | YES | YES | NO |
| Reciprocating Compressors | Implement a periodic LDAR program to identify excess or abnormal emissions from normal venting thresholds | YES | NO | NO |
| | Use vapor recovery units, that route vents to a low-pressure sales line, a production compressor suction, or onsite fuel gas supply | YES | YES | YES |
| | Use vapor recovery units, that route vents to a control device | YES | YES | YES |

TABLE CONTINUES >

| Source | Recommended Abatement Activity | Limited Lock-In Risk | High Permanence | Completeness |
|---------------------------|---|----------------------|-----------------|--------------|
| Reciprocating Compressors | Route blowdown gas to a low-pressure system during maintenance, testing, or shutdowns ⁷⁸ | YES | YES | NO |
| | Replace engine starts with zero-emission (compressed air, electric) engine starts ⁷⁹ | YES | YES | YES |
| | Implement a program that replaces or upgrades reciprocating compressor packing cups, rings, gaskets, and rods based on indication of leak from rod packing inspection Scheduled replacements should be carried out at least every three years, or as soon as excessive venting is identified | YES | YES | NO |
| | Install an electric motor in place of a gas-fired engine to reduce potential methane leaks in the fuel gas supply lines to the engine, compressor blowdown for restart, gas starters for the engine, and incomplete combustion ⁸⁰ | VARIABLE | YES | NO |
| | Replace cylinder unloaders ⁸¹ | YES | YES | NO |
| | Install air-to-fuel ratio control systems on >1000HP/rich burn engines to maximize performance, including use of captured hydrocarbon emissions to be used as fuel, delivered to the engine in the air intake | YES | YES | NO |
| | Install new methane-reducing catalyst in engine | VARIABLE | NO | NO |
| | | | | |
| Centrifugal Compressors | Implement a periodic LDAR program to identify excess or abnormal emissions from normal venting thresholds | YES | NO | NO |
| | Use vapor recovery units for gas starts, vented emissions, routing methane to a low-pressure sales line, a production compressor suction, or onsite fuel gas supply | YES | YES | YES |
| | Use vapor recovery units for gas starts, vented emissions, routing methane flare or catalytic destruction control | YES | YES | NO |
| | Route blowdown gas to low pressure system during maintenance, testing, or shutdowns | YES | YES | NO |

TABLE CONTINUES >

| Source | Recommended Abatement Activity | Limited Lock-In Risk | High Permanence | Completeness |
|---|---|----------------------|-----------------|--|
| Centrifugal Compressors | Replace engine starts with zero-emission (compressed air, electric) engine starts | YES | YES | NO |
| | Replace reciprocating compressor rings on a fixed schedule based on run hours | YES | NO | NO |
| | Install an electric motor in place of a gas-fired engine to reduce potential methane leaks in the fuel gas supply lines to the engine, compressor blowdown for re-start, gas starters for the engine, and incomplete combustion | VARIABLE | YES | NO |
| | Install air-to-fuel ratio control systems on >1000HP/rich burn engines to maximize performance, including use of captured hydrocarbon emissions to be used as fuel, delivered to the engine in the air intake | YES | YES | NO |
| Other Engines (Pump Jacks, Generators, Drilling Rigs, etc.) | Install an electric motor in place of a gas-fired engine | NO | YES | YES |
| | Install air-to-fuel ratio control systems on >1000HP/rich burn engines to maximize performance, including use of captured hydrocarbon emissions to be used as fuel, delivered to the engine in the air intake | YES | YES | NO |
| | Install methane-reducing catalyst in engine | YES | YES | NO |
| Well Completions | Producers implement a Reduced Emissions Completions (RECs) practice at hydraulically fractured wells, to capture natural gas that is produced during completions or workovers to limit venting to atmosphere, and deliver it to the sales line. Where implementing a REC is infeasible, gas is recovered and routed to a combustion device ⁸² | YES | YES | YES |
| Wellhead Emission | Vapor capture to eliminate oil well casinghead venting | YES | YES | YES |
| | Vapor capture to eliminate annular space venting | YES | YES | YES |
| Marginal Wells | Plug and abandon marginal wells ⁸³ | YES | YES | YES (Assuming best practice to minimize future leaks) |

TABLE CONTINUES >

| Source | Recommended Abatement Activity | Limited Lock-In Risk | High Permanence | Completeness |
|---------|--|----------------------|-----------------|--|
| Flaring | Reinject waste gas to underground storage | NO | YES | YES (if 100% of the gas is injected) |
| | Use waste gas on site to generate electricity for onsite power (such as generating electricity, microturbines) or for sale to the electrical grid | VARIABLE | YES | Depends on electricity generation displaced and of the share of the gas used |
| | Install two-stage separation to potential gas volumes to flares from wells that operate at elevated pressures | YES | YES | YES |
| | Install and compress gas and transport by road (CNG) | NO | YES | Depends on how the gas is used and the energy source displaced |
| | Install a mini-LNG (liquefied natural gas) skid | VARIABLE | YES | Depends on how the gas is used and the energy source displaced |
| | Install mini-GTL (gas-to-liquid) skid | VARIABLE | YES | Depends on how the gas is used and the energy source displaced |
| | Install systems to ensure flare capacity and production level is maintained, including during emergency situations | NO | YES | NO |
| | Monitor flares during LDAR surveys and perform additional routine inspections (Audio, Visual, and Olfactory (AVO) and engineering and maintenance inspections) | YES | NO | NO |
| | Install all gas to sales infrastructure before oil/gas wells are brought online | NO | YES | Depends on gas displaced |
| | Install systems to remotely monitor flaring functionality and efficiency such as Supervisory Control and Data Acquisition (SCADA) systems and logic controllers, auto ignition systems for unsupervised flare stacks with intermittent flaring, thermocouples (temperature sensors) to ensure pilots stay lit, or flame out detection device installed | YES | NO | NO |

TABLE CONTINUES >

| Source | Recommended Abatement Activity | Limited Lock-In Risk | High Permanence | Completeness |
|-----------------|--|----------------------|-----------------|--------------|
| Gathering Lines | Use leak detection and repair technologies to inspect gathering and other lines for leaks | YES | NO | NO |
| | Clearing lines (pigging), line heating, or chemical injection to reduce need for compression or flaring resulting from pressure drops in lines with buildup of liquid and hydrates | YES | NO | NO |
| | Install dedicated lines for gas and liquids to avoid multiphase flow, reducing need for compression or flaring resulting from clogging/pressure drops in lines | YES | YES | YES |
| | Replace old, damaged, or leaking sections of pipe with immaterial leakage rates | YES | YES | YES |

⁵⁴ U.S. Environmental Protection Agency, *Reroute Glycol Skimmer Gas* (Washington, D.C.: U.S. Environmental Protection Agency, 2025), <https://www.epa.gov/natural-gas-star-program/reroute-glycol-skimmer-gas>.

⁵⁵ Temporary or partial abatement solution allowable as part of long-term strategy to eliminate emission source.

⁵⁶ U.S. Environmental Protection Agency, *Desiccant Dehydrators* (Washington, D.C.: U.S. Environmental Protection Agency, 2025), <https://www.epa.gov/natural-gas-star-program/desiccant-dehydrators>.

⁵⁷ Methane Guiding Principles, *Reducing Methane Emissions from Process Venting* (London: Methane Guiding Principles, 2024), https://methaneguidingprinciples.org/wp-content/uploads/2024/05/MGP2024_Best-Practice_venting_FINAL.pdf.

⁵⁸ U.S. Environmental Protection Agency, *Flash Tank Separators* (Washington, D.C.: U.S. Environmental Protection Agency, 2025), <https://www.epa.gov/natural-gas-star-program/flash-tank-separators>.

⁵⁹ U.S. Environmental Protection Agency, *Vapor Recovery Units* (Washington, D.C.: U.S. Environmental Protection Agency, 2025), <https://www.epa.gov/natural-gas-star-program/vapor-recovery-units>.

⁶⁰ U.S. Environmental Protection Agency, *Optimize Glycol Circulation* (Washington, D.C.: U.S. Environmental Protection Agency, 2025), <https://www.epa.gov/natural-gas-star-program/optimize-glycol-circulation>.

⁶¹ U.S. Environmental Protection Agency, *Methanol Injection* (Washington, D.C.: U.S. Environmental Protection Agency, 2025), <https://www.epa.gov/natural-gas-star-program/methanol-injection>.

⁶² U.S. Environmental Protection Agency, *Electric Glycol Circulation Pumps* (Washington, D.C.: U.S. Environmental Protection Agency, 2025), <https://www.epa.gov/natural-gas-star-program/electric-glycol-circulation-pumps>.

⁶³ Monitoring programs must be coupled with repair and prevention programs.

⁶⁴ Methane Guiding Principles, *Best Practice Guide: Reducing Methane Emissions from Leaks in the Natural Gas Value Chain* (London: Methane Guiding Principles, 2024), https://methaneguidingprinciples.org/wp-content/uploads/2024/05/MGP2024_Best-Practice_Leaks_FINAL.pdf.

⁶⁵ Must be coupled with follow-up, repair, and prevention programs, such as installation of VRUs or flare controls coupled with advanced site-level monitoring programs to monitor for effectiveness.

⁶⁶ Must be coupled with a strategy to evaluate measurement-informed inventory results and target sources for elimination.

⁶⁷ U.S. Environmental Protection Agency, *Vapor Recovery Units*.

⁶⁸ U.S. Environmental Protection Agency, *Pressurized Storage Tank*, (Washington, D.C.: U.S. Environmental Protection Agency, 2025), <https://www.epa.gov/natural-gas-star-program/pressurized-storage-tank>.

⁶⁹ U.S. Environmental Protection Agency, *Plunger Lift System Without Planned Atmospheric Venting*, (Washington, D.C.: U.S. Environmental Protection Agency, 2025), <https://www.epa.gov/natural-gas-star-program/plunger-lift-system-without-planned-atmospheric-venting>.

⁷⁰ U.S. Environmental Protection Agency, *Instrument Air Controllers*, (Washington, D.C.: U.S. Environmental Protection Agency, 2025), <https://www.epa.gov/natural-gas-star-program/instrument-air-controllers>.

⁷¹ U.S. Environmental Protection Agency, *Mechanical Controllers*, (Washington, D.C.: U.S. Environmental Protection Agency, 2025), <https://www.epa.gov/natural-gas-star-program/mechanical-controllers>.

⁷² Methane Guiding Principles, *Best Practice Guide: Reducing Methane Emissions from Pneumatic Devices in the Natural Gas Value Chain*, (London: Methane Guiding Principles, 2024), https://methaneguidingprinciples.org/wp-content/uploads/2024/05/MGP2024_Best-Practice_Pneumatics_FINAL.pdf.

⁷³ U.S. Environmental Protection Agency, *Route Blowdown Gas to Low-Pressure System*, (Washington, D.C.: U.S. Environmental Protection Agency, 2025), <https://www.epa.gov/natural-gas-star-program/route-blowdown-gas-low-pressure-system>.

⁷⁴ U.S. Environmental Protection Agency, *Pipeline Hot Taps*, (Washington, D.C.: U.S. Environmental Protection Agency, 2025), <https://www.epa.gov/natural-gas-star-program/pipeline-hot-taps>.

⁷⁵ U.S. Environmental Protection Agency, *Redesign Blowdown/Venting Systems*, (Washington, D.C.: U.S. Environmental Protection Agency, 2016), <https://19january2017snapshot.epa.gov/sites/production/files/2016-06/documents/redesignblowdownsystems.pdf>.

⁷⁶ Temporary or partial abatement solution allowable as part of long-term strategy to route emissions for use.

⁷⁷ Must be coupled with method to capture emissions and route to sales or other use.

⁷⁸ U.S. Environmental Protection Agency, *Route Blowdown Gas to Low-Pressure System*.

⁷⁹ U.S. Environmental Protection Agency, *Air Starters*, (Washington, D.C.: U.S. Environmental Protection Agency, 2025), <https://www.epa.gov/natural-gas-star-program/air-starters>.

⁸⁰ U.S. Environmental Protection Agency, *Electric Compressor Motors*, (Washington, D.C.: U.S. Environmental Protection Agency, 2025), <https://www.epa.gov/natural-gas-star-program/electric-compressor-motors>.

⁸¹ Methane Guiding Principles, *Best Practice Guide: Reducing Methane Emissions from Energy Use & Power Generation in the Natural Gas Value Chain*, (London: Methane Guiding Principles, 2024), https://methaneguidingprinciples.org/wp-content/uploads/2024/05/MGP_Best-Practice-Guide-Energy-Use_FINAL.pdf.

⁸² U.S. Environmental Protection Agency, *Reduced Emission Well Completions and Workovers*, (Washington, D.C.: U.S. Environmental Protection Agency, 2025), <https://www.epa.gov/natural-gas-star-program/reduced-emission-well-completions-and-workovers>.

⁸³ U.S. Environmental Protection Agency, *Well Plugging*, (Washington, D.C.: U.S. Environmental Protection Agency, 2025), <https://www.epa.gov/natural-gas-star-program/well-plugging>.

3.1 Project Proposals and Selection

When proposing projects for a UoP instrument, the Guidance recommends that capital seekers quantify their impact in terms of predicted methane emission reductions. This quantification is essential for comparing the relative value of different abatement activities and informing capital deployment decisions. Capital seekers may also consider attempting to quantify associated benefits, including mitigation of other greenhouse gases, air pollutants, occupational health and safety risks, and other benefits, to the best degree possible.

It is recommended that capital seekers' estimates follow a hierarchy of quantification norms (Table 2). Given the broad accessibility of quantification tools that can allow for rapid and cost-effective assessment of emissions at level 2 or higher, capital seekers should avoid the use of estimates that do not meet secondary-level norms (i.e., generic emission factor-based estimates aligned with the Oil and Gas Methane Partnership (OGMP) Level 3).

When shifting from pre-transaction baselining and predictions of emissions abatement to post-transaction quantification of emissions, capital seekers may change methodologies to support greater accuracy of quantification over time. Though this may create challenges in judging progress against baseline emissions, improved emissions data quality can build confidence with stakeholders that capital seekers are undertaking best efforts to understand their emission sources and reduce them over time.

Table 2: Hierarchy of Source-Level Methane Emission Quantification Norms

| | | |
|---|---|---|
| <p>Highest fidelity</p> <p>↑</p> <p>1</p> <p>2</p> <p>3</p> <p>↓</p> <p>Lowest fidelity</p> | <ul style="list-style-type: none"> • Continuous direct measurement of vented methane flow using calibrated flow meters • Continuous direct measurement of vent gas flow coupled with empirically derived gas composition data • For sources of methane emissions from flaring or combustion, continuous direct measurement of vent gas flow coupled with empirically derived gas composition data and empirically derived methane slip or destruction efficiencies | <ul style="list-style-type: none"> • Specific emissions factors derived from direct measurement of the source • Engineering calculations, process models, or emission factors supported by direct measurement inputs and verified by remote measurements, applied temporally across all operating conditions • The bottom-up, source-level emissions quantification is supported by top-down reconciliation, using appropriate methodologies where feasible and relevant |
| | <p>Manufacturer-specific emission factors or emission factors based on recent studies representative of both the source, operating condition, and the region</p> | |
| | <p>Generic emission factor-based estimates that are not representative of either the source, the operating condition, or the region</p> | |

To build confidence in a capital seeker's emissions abatement plan, the capital seeker should provide the following metrics to external reviewers in pre-transaction project proposals:

- Quantified estimate of abatement (tons of CH₄ and CO₂ emissions from flaring) for each eligible project in a portfolio. This abatement should be calculated by subtracting the forecasted post-implementation emissions from the baseline emissions for the impacted sources.
- Descriptions of the alignment of projects or a portfolio of projects with the principles in [Section 2.1](#) and/or the Illustration of Potential Sources and Abatement Activities in [Table 1](#).
- Details of any performance or operational characteristics that must be met to achieve maximum abatement potential for each eligible project.

To further build confidence, the capital seeker may also consider providing the following metrics:

- Quantification of the projected impact of individual and/or groups of projects on the reporting entity's emissions targets, if any have been set.
- A description of the capital seeker's efforts to quantify and mitigate projected direct or indirect impacts on other GHGs (tons/year for each GHG) caused by the proposed project on other upstream or downstream segments of the supply chain.
- Details of efforts to assess and minimize trade-offs from carbon lock-in risks. This may include providing details of a climate alignment strategy and, where methane and flaring abatement is not meaningfully compromised, prioritizing projects that only involve operational expenditures or retrofitting.
- Quantification and description of other social and environmental benefits that will be achieved, as well as potential negative impacts, as part of the project.



3.2 Reporting

The Guidance recommends UoP reporting in line with the *Green Bond Principles' Handbook: Harmonized Framework for Impact Reporting*.⁸⁴ **The following reporting criteria are recommended to be reported publicly and reviewed by an external reviewer on an annual basis in conjunction with the reporting requirements laid out under the GBP:**

- Methane emissions reductions achieved in metric tons of CH₄ and flaring emissions reductions in CO₂ emissions and/or volume of gas flared for the portfolio of abatement projects. Each should be reported on an annual basis as separate line items from overall greenhouse gas reductions and using updated calculation methodologies as they improve over time (see [Section 3.1](#)).
- Description of quantification methodologies used to determine reductions, in line with [Table 2](#).

Where feasible and relevant, capital seekers may also consider providing the following reporting criteria either publicly or confidentially to a third party:

- Descriptions of the alignment of projects or a portfolio of projects with the principles in [Section 2.1](#) and/or the Illustration of Potential Sources and Abatement Activities in [Table 1](#).
- Efforts to ensure emissions reductions are maintained throughout the project's lifespan, including plans for regular monitoring and responding to indications that emissions are higher than projected (e.g., due to equipment failure, operator error).
- A description of potential efforts by the capital seeker to quantify and mitigate projected direct or indirect impacts on other GHGs caused by a project on other upstream or downstream segments of the supply chain.⁸⁵
- Quantification and description of other social and environmental benefits achieved, as well as potential negative impacts, as part of the project.
- Details of efforts to assess and appropriately minimize trade-offs from carbon lock-in risks. This may include providing details of a climate alignment strategy and, where methane and flaring abatement are not meaningfully compromised, prioritizing projects that involve only operational expenditures or retrofitting.

In addition to the above metrics, capital seekers are recommended to contract with qualified third-party auditors to verify claims of project development and emissions abatement. Verifiers contracted by capital seekers are encouraged to review data reported to regulators, national authorities, or from independent public data platforms (such as satellites for flaring and methane venting) to check for inconsistencies.

⁸⁴ International Capital Market Association, *Handbook: Harmonised Framework for Impact Reporting* (Zurich: International Capital Market Association, 2024), <https://www.icmagroup.org/assets/documents/Sustainable-finance/2024-updates/Handbook-Harmonised-Framework-for-Impact-Reporting-June-2024.pdf>.

⁸⁵ Case Study: Project to replace 500 miles of cast iron gathering pipeline with HDPE gathering pipeline.

The pipeline gathers rich, wet gas from 10 central batteries that collect gas from approximately 50 wellheads. The project also intends to increase the overall capacity of the gathering system, which may reduce future upstream flaring. Newer and less-leaky pipe will reduce CH₄ emissions over time from gathering pipelines. Quantification of savings may occur from using emission factors (g CH₄/mile of pipe) based on pipe material along with any large intermittent leaks identified over the last few years of operation of the cast iron pipe. Additionally, reduced upstream flaring due to the capacity increase should also be quantified. However, during the removal and replacement of the gathering pipeline, additional associated gas flaring may occur if the wells keep producing and there is no other outlet for the natural gas. To mitigate this, the operator should consider the following actions as part of the project plan that is submitted as part of transaction documentation:

- Conduct flow modeling of the gathering pipeline system to identify when produced gas can flow into the system during removal/replacement of certain pipe sections. The anticipated emissions of restarting flow on wells should also be accounted for if material.
- Shut in wells during periods of time when there is no path to market for a specific well. Document decision-making processes.
- Install temporary equipment to allow for gas to still flow to market (this may be infeasible in all cases).
- Quantify additional emissions that will occur because of the project and identify reasons for uncertainties in the estimate. Subtract these emissions from the overall estimated emission reductions of the project.
- Provide a plan to monitor and report emissions related to the project during project execution and startup.

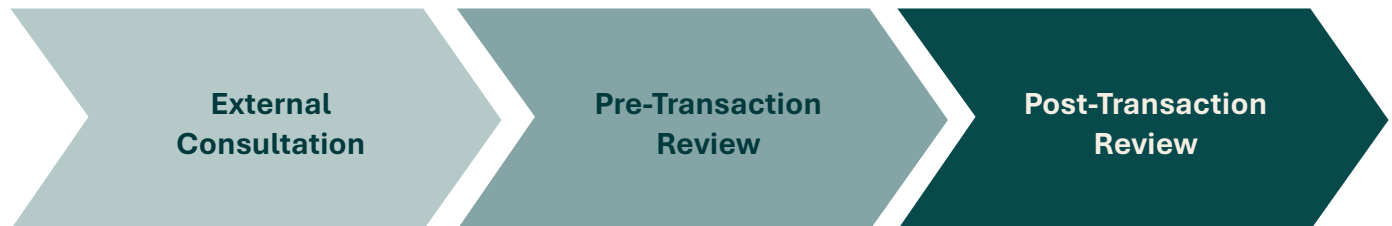


The following is a list of recommended evidence and documents capital seekers may provide as part of the auditing process to verify implementation of methane abatement activities.

- Capital seekers should provide inventories of emitting equipment, as well as quantification methodologies used to determine emissions, in line with [Table 2](#), on an annual basis.
- The audit should include a review of purchase orders and invoicing to demonstrate full or partial procurement of abatement infrastructure or abatement program activities.
- Verification may also involve site visits to confirm full or partial completion of infrastructure projects, as well as the proper operation of methane abatement infrastructure. To manage the potential costs of these visits, capital seekers and other counterparties may consider randomly selecting a representative sample of sites.
- Operating records and SCADA systems should be used to record and document activities within recommended operating limits.
- Capital seekers must maintain detailed monitoring, emission reporting, and repair records that document abatement program progress.
- Evidence should include written standard operating procedures that outline the correct operation of abatement infrastructure, improved handling of natural gas (methane) or other abatement processes, or monitoring technologies.
- This also includes documentation of instruction (e.g., workshops or training manuals) provided to operators on how to best manage abatement infrastructure or monitoring activities.
- Verification can include interviews with operators and field managers to validate their knowledge and adherence to best practices associated with abatement infrastructure or monitoring activities.

Capital seekers may decide to publish the details of the third-party audit in full or in a summary document that provides an overview of the reviewer’s assessment. If capital seekers are unable to provide sufficient evidence to verify project development, they are encouraged to consider providing additional explanation and justification. Further guidance on the selection and use of a third-party reviewer is provided in [Section 4](#) below.

In alignment with the GBP, capital seekers should engage external reviewers throughout the UoP financing process, including a pre-transaction review by a second-party opinion provider and post-transaction auditing. Capital seekers with limited expertise on methane and flaring abatement may also consider engaging with external consultants to assist in the design of a mitigation program.



To ensure an effective and credible review process, the Guidance strongly recommends that capital seekers consider using specialized subject matter experts to evaluate both the financial expenditures and the methane abatement activities undertaken by the capital seeker. This section outlines (a) recommended criteria for external reviewers to consider when assessing projects, as well as (b) criteria for capital seekers and financial institutions to consider when selecting skilled reviewers.

4.1 Role of External Consultation

UoP capital seekers should maximize their opportunity for designing a successful, cost-effective, and technically sound methane and flaring abatement project proposal. To support this goal, capital seekers with limited experience, capacity, or expertise on methane and flaring abatement may consider enlisting a subject matter expert to support in the development of their emissions abatement plan. [Table 3](#) below outlines the criteria that capital seekers may look for when selecting an external consultant.

To ensure an effective and credible review process, the Guidance strongly recommends that capital seekers consider using specialized, subject matter experts to evaluate both the financial expenditures and the methane abatement activities undertaken by the capital seeker.

4.2 Role of Pre-Transaction External Review

The Guidance recommends the use of an independent third-party reviewer to assess pre-transaction project proposals and supporting documents, aligning with the recommendations by ICMA. In addition to the recommendations of the GBP for pre-issuance,⁸⁶ the Guidance recommends that reviewers verify:

- The proposed methane abatement projects align with the recommended principles in [Section 2](#) and, if applicable, [Table 1](#) outlining potential sources and abatement activities.
- The selected abatement projects, or bundle of projects, are among the most material emissions sources and will have among the greatest abatement potential from the projects available for selection by the capital seeker (i.e., avoidance of cherry picking).
- The proposed project is credible as being among the solutions most likely to succeed for the given operating asset, geography, available technology, and other contextual considerations.
- Capital seekers have taken appropriate steps to ensure the permanence of emissions reductions over the project's lifetime.
- The emissions reduction potential (tons CH₄/year) is quantifiable according to recommendations described above in [Section 3.1](#), as well as primary data used to estimate quantitative impacts.

Reviews should also consider verifying:

- The possible negative environmental and social impacts (e.g., increased supply chain emissions, carbon lock-in risks) outside of the project boundaries are described and, where possible, quantified, mitigated, or appropriately contextualized as trade-offs to achieve more immediate reductions in methane and flaring emissions.
- The capital seeker has evaluated and established operational performance criteria necessary to maximize methane abatement potential and has a plan for meeting these needs.
- The capital seeker has adequately identified the equipment, construction, and operational costs associated with the project, as well as the expected lifetime of the project.
- The capital seeker has provided sufficient evidence and documentation to support the proposal's methane abatement potential, likelihood to succeed, costs, and mitigation of potential associated impacts/risks.

Given the technical nature of oil and gas, methane and flaring abatement, [Table 3](#) below outlines recommended criteria that capital seekers may consider when selecting an external reviewer.

⁸⁶ The [Green Bond Principles](#) recommend that “issuers appoint (an) external review provider(s) to assess through a pre-issuance external review the alignment of their Green Bond or Green Bond program and/or Framework with the four core components of the GBP (i.e., Use of Proceeds, Process for Project Evaluation and Selection, Management of Proceeds, and Reporting).”



4.3 Role of Post-Transaction External Review

In alignment with the GBP, the Guidance recommends that capital seekers consider using external auditors or independent third-party reviewers to evaluate annual reports and post-transaction documentation. However, given the particular challenges of methane emissions quantification, the Guidance recommends capital seekers consider increased disclosures beyond GBP recommendations to allow stakeholders to evaluate abatement impact after transaction or maturity. Where relevant, these disclosures may be used to determine any corrective action regarding non-compliance with the terms of the financial instrument.

In addition to the recommendations of the GBP for post-issuance,⁸⁷ the Guidance recommends reviewers verify on an annual basis:

- Any updates to the alignment of methane abatement projects with the recommended principles in [Section 2](#) and, if applicable, [Table 1](#), outlining potential sources and abatement activities.
- Quantification of the methane emissions reductions undertaken in a given reporting year, as well as for the total duration of the project.
- The methodology for quantifying methane abatement impact to date, including primary data used in estimates.
- Equipment purchases, construction, installation, and operational status for any Opex or Capex projects.

Post-transaction reviewers may also consider verifying:

- The development of process documents, training programs, and hiring efforts to meet the intended needs of any methane abatement projects or broader capital-seeker-wide methane mitigation efforts.
- Demonstrated performance of the methane abatement project using internal reporting metrics, SCADA, measurement campaigns, operator interviews, or other methods.
- A description of any negative environmental and social impacts (e.g., increased supply chain emissions, carbon lock-in risks) outside of the project boundaries is described and, where possible, quantified, mitigated, or appropriately contextualized as trade-offs to achieve more immediate reductions in methane and flaring emissions.

As discussed in [Section 3.1](#) above, third-party verifiers will be required to review additional evidence that demonstrates abatement performance, potentially involving site visits. Such specialty selection criteria for post-transaction reviewers are outlined below in [Table 3](#).



⁸⁷ The Green Bond Principles recommend that “[post-issuance], an issuer’s management of proceeds be supplemented by the use of an external auditor, or other third party, to verify the internal tracking and the allocation of funds from the Green Bond proceeds to eligible Green Projects.”

Table 3: Recommended Selection Criteria for External Reviewers

The following are the recommended subject matter expertise for external consultants and third-party reviewers that a capital seeker and financier need to consider during selection. It is critical that a review of the specific individuals involved in the consultation or verification is completed to determine if they are competent and/or accredited to perform their tasks.

| | External Consultant | Pre-Transaction Reviewer | Post-Transaction Reviewer |
|--|---------------------|--------------------------|---------------------------|
| Annual Reporting | | | |
| Familiarity with ICMA Reporting Template | X | X | X |
| Required to complete and attest to ICMA template | | X | X |
| Required to complete ICMA External Review Service Mapping Template ⁸⁸ | | X | X |
| Financial Auditing | | | |
| Demonstrated experience reviewing cost estimates for capital project proposals | X | X | |
| Demonstrated experience reviewing allocation of proceeds spent against project and sub-projects, including review of purchase orders | | X | X |
| Geography | | | |
| Ability to conduct desktop review of documents | X | X | X |
| Ability to comprehend internal documents in the appropriate language of the facility | | X | X |
| Demonstrated experience in conducting field assessments, developing sample plans, and conducting interviews | | X | X |

TABLE CONTINUES >

⁸⁸ International Capital Market Association, *The NICE-IS: The New Issuance and Communication E-System*, (Zurich: ICMA, 2024), https://www.icmagroup.org/assets/NICE-IS_05_2024.pdf.

| | External Consultant | Pre-Transaction Reviewer | Post-Transaction Reviewer |
|---|---------------------|--------------------------|---------------------------|
| Methane Abatement | | | |
| Demonstrated familiarity with methane emissions inventories such as under ISO 14064-1 ⁸⁹ , ISO 14064-3 ⁹⁰ , and ISO 14065 ⁹¹ | X | X | X |
| Demonstrated experience with completing, consulting to, or auditing emission inventories for regulatory or voluntary initiatives including EU ETS, CDM, CDP, and others. | X | X | X |
| Demonstrated experience with top-down and bottom-up methane emission quantification approaches, such as through developing and coordinating research projects, implementing quantification programs, and analyzing quantification data | X | X | X |
| Demonstrated process engineering or environmental compliance experience in implementing procedures to minimize emissions from critical methane emission sources as well as operator training to procedures | X | X | X |
| Demonstrated experience with analysis of leak detection and repair (LDAR) program performance and improvement, including the use of advanced technologies such as continuous monitoring systems or intermittent plane/drone-based surveys | X | X | X |
| Auditing Services | | | |
| Conflict of interest statement | | X | X |
| Professional auditing services experience and accreditation, such as under ISO 14065 | | X | X |

In alignment with the Green Bond Principles, the Guidance recommends that capital seekers consider using external auditors or independent third-party reviewers to evaluate annual reports and post-transaction documentation.

⁸⁹ International Organization for Standardization, ISO 14064-1:2018, *Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals*, (Geneva: ISO, 2018), <https://www.iso.org/standard/66453.html>.

⁹⁰ International Organization for Standardization, ISO 14064-3:2019, *Greenhouse gases — Part 3: Specification with guidance for the verification and validation of greenhouse gas statements*, (Geneva: ISO, 2019), <https://www.iso.org/standard/66455.html>.

⁹¹ International Organization for Standardization, ISO 14065:2020, *Greenhouse gases — General principles and requirements for bodies validating and verifying environmental information*, (Geneva: ISO, 2020), <https://www.iso.org/standard/74257.html>.



Guidance for Including Methane and Flaring Abatement in KPI-Linked Instruments

- [1. Introduction](#)
- [2. Defining Qualifying Methane and Flaring Abatement KPIs and SPTs](#)
- [3. Guidance on Selection of KPIs and SPTs](#)
- [4. Post-Transaction Reporting](#)
- [5. External Review and Verification](#)

Introduction

Guidance: Use-of-Proceeds Instruments

Guidance: KPI-Linked Instruments



1 INTRODUCTION

The **Guidance for Including Methane Abatement in Key Performance Indicator (KPI)-Linked Instruments** (the Guidance) is the product of the **Methane Finance Working Group (the Working Group)**, a collaborative effort between industry, finance, and civil society. The recommendations are presented as voluntary and non-exhaustive. For more on the participants, process, and rationale for the development of this Guidance, please see supporting research to this document: [A Roadmap to Catalyze Methane Abatement in the Oil and Gas Sector Using Debt Financing](#).

Following the overarching principles set forth by the International Capital Markets Association⁹² (ICMA) in their capacity as the *Secretariat for the Sustainability-Linked Bond Principles (SLBP)*,⁹³ the Guidance offers recommendations to capital seekers in the oil and gas value chain, their capital providers, and other stakeholders toward the incorporation of methane abatement activities into “KPI-linked” bonds, loans, or other financial instruments. The Guidance seeks to accelerate the deployment of capital to address methane emissions abatement in oil and gas production.

KPI-linked instruments are designed to incentivize performance at the enterprise level by establishing KPIs for future outcomes within a predefined timeframe. The proceeds of these instruments are intended to be used for general corporate purposes, while providing for variation of the instrument’s financial or structural characteristics. The most common type of variation is interest expense changes based on performance against pre-determined KPIs. In select cases, capital seekers may choose to combine a KPI-linked instrument with a use of proceeds (UoP) instrument. For related guidance, please refer to the [Guidance for Including Methane and Flaring Abatement in Use of Proceeds Instruments](#).

The Guidance is tailored to the oil and gas upstream segment of the supply chain that includes oil and gas production (such as drilling and completions), gathering, boosting, and processing, as this is where the majority of the sector’s methane and flaring emissions are concentrated.^{94 95 96} However, there is applicability for other segments of the value chain that employ similar processes. Future in-depth guidance may be provided specifically for transmission, compression, storage, liquefaction, shipping, and regasification. The Guidance covers CH₄ emissions, as well as CO₂ emissions from flaring. Mitigating these sources of emissions should be addressed in any capital program to reduce scope 1 and 2 emissions.⁹⁷ However, it is recommended that capital seekers consider these reductions as one piece of a broader decarbonization and energy transition strategy.

Ultimately, it is at the capital provider’s discretion to participate in any transaction that references the Guidance. It is at the capital provider’s discretion to decide if a set of KPIs and targets is ambitious enough relative to its policies and is aligned with its fiduciary duty. The Guidance is offered as a roadmap to help capital seekers clearly convey their ambition and impact to all stakeholders.

⁹² International Capital Market Association, International Capital Market Association, (Zurich: ICMA, 2025), <https://www.icmagroup.org>.

⁹³ International Capital Market Association, *Green Bond Principles*; and International Capital Market Association, *Sustainability-Linked Bond Principles: Voluntary Process Guidelines*.

⁹⁴ Ramón A. Alvarez et al., “Assessment of methane emissions from the U.S. oil and gas supply chain.”

⁹⁵ Joannes D. Maasakkers et al., “A large increase in US oil and gas methane emissions.”

⁹⁶ MacKay et al., “A Comprehensive Integration and Synthesis of Methane Emissions.”

⁹⁷ The recommendations in this document should be considered necessary, but incomplete for the sector to meet the IEA Net Zero Emissions by 2050 Scenario (NZE) recommendations. In order for the global economy to be in line with the NZE, not only do methane and flaring emissions need to decrease, but global demand for oil and gas must decline. For additional background, see the *Methane Finance Working Group Short Form Narrative*.

2.1 Guiding Principles: Key Performance Indicators

Recommendations in the Guidance, like the ICMA's SLBP, are voluntary process guidelines to promote transparency, ambition, and integrity in the development of financial instruments with environmental benefits. Given the heterogeneity of the sector, the Guidance recommends that the selection of KPIs and calibration of Sustainability Performance Targets (SPTs) aim for the most ambitious course of action, depending on their geography, tenure in the industry, status of regional regulations, ownership, and funding structures, among other factors. The Guidance aims to provide flexibility for capital seekers to select KPIs and SPTs that are appropriately suited to their technical and financial capabilities, while maintaining a level of ambition to ensure the instrument is environmentally credible.

In support of those aims, and in addition to the ICMA's SLBP, the Guidance recommends that capital seekers follow these guiding principles when designing KPI-linked instruments that include methane and flaring abatement:

- KPIs should reflect real, measurable, and durable methane and flaring emission reductions, including both methane and other greenhouse gases (GHGs) measured on a near-term (20-year) and longer-term (100-year) basis (see [Section 2.3](#), [Section 3.2](#), and [Section 3.3](#)).
- KPIs should be quantifiable using the best available data and evidence and should allow for compliance with the verification requirements outlined in [Section 5](#). Recommended quantification methodologies are outlined in [Table 1](#) (see [Section 2.3](#), [Section 3.2](#), [Section 4](#), and [Section 5.3](#)).
- Emissions outside the KPI boundary resulting from capital seeker actions should not materially dilute achieved emission reductions under the framework. Capital seekers are recommended to assess and document any indirect emissions impacts resulting from their activities (see [Section 5.3](#)).
- KPIs should apply to all material oil and gas operations within a capital seeker's upstream portfolio. If a capital seeker has operated and non-operated assets, KPIs should be developed for each or be inclusive of both (see [Section 3.1.1](#)).
- KPIs should clearly reference benchmarks and frameworks recommended by the Guidance or that are otherwise broadly recognized and tied to industry or regulatory best practices (see [Section 2.3](#), [Section 3.2](#), and [Section 3.5](#)).
- In order to provide financial stakeholders with assurance that capital-seeker-level emission reductions result in real-economy emissions reductions, achievement of KPIs cannot come through the divestment of assets without appropriate climate safeguards^{98,99} (see [Section 3.4](#)).
- Capital seekers should provide investors with assurance regarding ambition and authenticity of approach, as this will, in part, guide how transactions are perceived in the market. Therefore, capital seekers should minimize misalignment between publicly stated climate ambitions and engagement with policymakers. Capital seekers are encouraged to follow the approach outlined in the We Mean Business Responsible Policy Engagement corporate advocacy guidance document.¹⁰⁰

⁹⁸ Environmental Defense Fund, *Climate Principles for Oil & Gas Mergers and Acquisitions*, (New York: Environmental Defense Fund, 2022), <https://business.edf.org/wp-content/blogs.dir/90/files/Climate-Principles-Asset-Transfer.pdf>.

⁹⁹ Natural Resource Governance Institute, *Responsible Exit Principles for Oil & Gas Companies*, (New York: Natural Resource Governance Institute, 2024), https://resourcegovernance.org/sites/default/files/2024-09/Responsible_Exit_Principles_for_Oil_Gas_Companies.pdf.

¹⁰⁰ We Mean Business Coalition. Corporate Climate Policy Engagement Reporting Template. February 10, 2025, We Mean Business Coalition, <https://www.wemeanbusinesscoalition.org/wp-content/uploads/2025/02/WMBC-Corporate-Advocacy-Template.pdf>.

2.2 Guiding Principles: Sustainability Performance Targets

SPTs are time-bound milestones for each KPI that trigger a change to the interest rate of the capital borrowed. The Guidance recommends that, in addition to the ICMA’s SLBP, methane and flaring abatement SPTs should:

- Represent a substantial, material improvement beyond a “business-as-usual” trajectory. Capital seekers should consider alignment with the International Energy Agency (IEA)’s Net Zero Emissions (NZE) scenario’s 75% absolute reduction in methane emission by 2030 and/or with industry standard “near-zero” methane and flaring targets on an intensity basis.^{101 102 103}
- SPTs should clearly reference benchmarks and frameworks recommended by the Guidance or that are otherwise broadly recognized and tied to industry best practices or leading regulatory standards (see [Section 2.3](#), [Section 3.3](#), and [Section 3.5](#)).
- SPTs should be quantifiable using the best available data and evidence. In the case where data quality is intended to improve over time, specific quantification methodologies should be determined and disclosed for each SPT, allowing stakeholders to clearly understand the level of data quality and potential uncertainty ranges (see [Section 3.3](#)).
- The achievement of SPTs should be externally auditable by third-party, qualified subject matter experts (see [Section 5.3](#)).

2.3 KPI and SPT Selection Matrix

The following matrices outline recommended KPI categories and SPTs for oil and gas capital seekers, with the goal of providing capital seekers with a menu of options to consider when designing a fit-for-purpose methane and flaring mitigation strategy to address entity-wide emissions. The goal is to enable a plan that is both ambitious and achievable. The KPIs detailed below represent an illustrative, non-exhaustive list of potential targets and disclosures. The SPTs associated with each time period aim to outline the pace of progress associated with industry-leading abatement programs for each KPI. [Table 1](#) is for operated assets within a capital seeker’s portfolio, while [Table 2](#) is for non-operated assets.

The listed KPIs encompass both Core and Secondary KPIs, aligning broadly with the ICMA KPI registry definitions.¹⁰⁴ **Core KPIs** should be considered priority indicators that encompass overall performance for a capital seeker’s portfolio. Methane and flaring target Core KPIs may be considered “lagging” indicators that only reflect the net results of an abatement strategy and activities after they are enacted.

Where the methane emissions data quality is insufficient to support stakeholder confidence, the Guidance proposes avoiding assessing initial progress against a baseline. **Here, the recommendations in this Guidance differ from the standard approach outlined in the ICMA’s SLBP. The SLBP typically requests a 3-year history and expects a verified baseline where feasible and relevant. This difference in approach is due to the distinct challenges of quantifying methane emissions from oil and gas operations—a process that can take years for operators to achieve with a high degree of confidence.**

¹⁰¹ International Energy Agency, *Methane emissions in a 1.5 °C pathway*, in *Global Methane Tracker 2024* (Paris: IEA, 2024), <https://www.iea.org/reports/global-methane-tracker-2024/methane-emissions-in-a-15-0c-pathway>.

¹⁰² Oil and Gas Climate Initiative, *Aiming for near zero methane emissions from operated oil and gas assets: a guidance document*, (London: OGCI, 2023), <https://www.ogci.com/wp-content/uploads/2023/09/Near-zero-guidance.pdf>.

¹⁰³ Oil and Gas Decarbonization Charter, *Oil and Gas Decarbonization Charter*, (COP28, 2025), <https://www.ogdc.org/>.

¹⁰⁴ International Capital Market Association, *Illustrative KPIs Registry*, (Zurich: ICMA, 2024), <https://www.icmagroup.org/assets/documents/Sustainable-finance/2024-updates/Illustrative-KPIs-Registry-June-2024.xlsx>.

The Guidance recommends the following five Core KPIs:

- 1. Measurement-based source-level inventories reconciled with site-level measurements:** Capital seekers should endeavor to have a firm understanding of their emissions through increasingly improved quantification metrics, leading up to a reconciled, measurement-based inventory. Measurement-based inventories can build confidence in reported numbers and are critical to identifying (and therefore addressing) emissions sources.
- 2. Methane Intensity (gCH₄/ Barrel of Oil Equivalent (BOE) produced and/or CH₄/tons natural gas produced):** Methane Intensity is a desirable KPI for standardized benchmarking of performance across the oil and gas sector. Two metrics are broadly used by industry to characterize operators' intensity: a methane loss rate (methane lost per methane produced, which typically better ranks gas producers) and energy intensity (methane lost per energy produced, which typically better ranks oil producers).^{105 106} Since neither metric alone provides a complete picture, it is recommended that capital seekers consider setting equivalent targets for, or at least report against, both.¹⁰⁷ If capital seekers cannot or choose not to select both, they should use the metric best suited to their operational profile and regulatory compliance needs, where applicable. It is recommended that even capital seekers with generic emission factor inventories—aligned with OGMP Level 3—should set an intensity target.¹⁰⁸
- 3. Absolute Methane Emissions (metric tons CH₄):** Total corporate emissions applying the same increasingly credible metrics as KPI 1 above. Absolute Methane Emissions should not increase beyond the year when a robust measurement-based baseline is established. This is to avoid reductions in Methane Intensity being achieved through increased production alone; however, if Absolute Methane Emissions do increase, it should be explained as to how this is due to an improvement in direct measurement and not an increase in overall emissions.
- 4. Super-emitter Monitoring and Abatement (Deployment of top-down detection at <=50kg/hr 3x year, <=100 kg/hr 12x/year or equivalent):** The Guidance recognizes the increased availability of super-emitter data from public sources as well as site-level detection technologies. This data can support the detection and abatement of major (often persistent) methane sources, and expose capital seekers to risks of publicly visible poor methane performance. This metric relates to capital providers' ability to address all major emission sources detected through publicly available sources with increasing stringency after one year of procuring monitoring data of large sources.
- 5. Flaring Intensity Target (m³/ Barrels of Oil Equivalent (BOE) or Volume Flared gas/Volume Natural Gas Produced):** Flaring Intensity is a desirable metric for standardized benchmarking of performance across the oil and gas sector, with BOE chosen as the recommended denominator to apply equitably to oil and gas market participants alike, however capital seekers may also consider selecting equivalent targets measured as total flared gas from oil and gas production over total natural gas production (flared gas/natural gas produced).

¹⁰⁵ Scott Seymour, Donglai Xie, Mary Kang, Stefan Schwietzke, Daniel Zavala-Araiza, and Steven Hamburg, "Methane Emission Intensity Metrics: Unmasking the Trade-offs," preprint, Research Square, posted May 28, 2025, accessed June 18, 2025, <https://doi.org/10.21203/rs.3.rs-6753363/v1>.

¹⁰⁶ While produced gas or energy is generally recommended as the denominator (versus marketed product), differences in energy intensity rankings between produced or marketed amounts have been shown to be minimal, suggesting that an approximation of marketed volumes would not impart significant bias in energy intensity.

¹⁰⁷ Ibid.

¹⁰⁸ While generic emission-factor-based inventories—aligned with OGMP Level 3—may not provide a robust quantification of current methane emissions level, they remain a valuable tool for establishing an initial understanding of potential emission sources. These inventories can support the identification of key equipment and operational activities contributing to emissions, thereby enabling companies to set preliminary methane intensity targets. Although such inventories may underestimate actual emissions due to their reliance on default or average emission factors rather than direct measurements, they still offer insight into the minimum technically achievable emissions based on equipment counts and standard operating conditions. This baseline can serve as a useful reference point for prioritizing mitigation actions and planning the transition to higher-tier reporting levels, such as OGMP Levels 4 and 5, which incorporate site-specific measurements and advanced quantification methods.

Secondary or “activity-based” KPIs are methane abatement activities that can help operators to drive early reductions even when they only have a limited understanding of their emissions profile. Given methane emissions data measurement challenges, these are designed as readily verifiable activities that can allow companies to implement well-known “no regrets” emissions reductions best practices, such as leak detection and repair, to make meaningful progress in emissions reductions even as they continue to work toward robust quantification of their overall emissions.

Recommended secondary indicators include abatement targets for major emission sources and source-specific activities, particularly those that can be achieved in short order, with lower capital expenditure, or may present a significant reduction in a capital seeker’s emissions inventory. SPTs associated with these KPIs are recommended in Tables 1 and 2 based on achievable, industry-leading performance represented by various methane abatement benchmarks (see Table 4 below).

The table below makes recommendations for the pace at which methane abatement targets can be met for each KPI. This pace is supported by voluntary programs (Oil and Gas Decarbonization Charter (OGDC)¹⁰⁹, Oil and Gas Climate Initiative (OGCI)¹¹⁰) with targets for the year 2030 for major methane reductions. However, the Guidance also recognizes that there may be significant variation in capital seekers’ starting points and abatement timeframes. **For certain capital seekers, SPTs that occur in N+1 may be a more suitable level of ambition at which to start; while for others, SPTs for N+3 in the table below might be a more appropriate starting target (where “N” is the starting time period and “+1” is equivalent to one year).**

For additional guidance on KPI and SPT selection for different types of capital seekers, see [Section 3.1](#), [Section 3.2](#), and [Section 3.3](#).



¹⁰⁹ Oil and Gas Decarbonization Charter, *About the OGDC*, (COP28, 2025), <https://www.ogdc.org/about/>.

¹¹⁰ Oil and Gas Climate Initiative, *Oil and Gas Climate Initiative*, (London: OGCI, 2025), <https://www.ogci.com/>.

Table 1: Recommended Corporate KPI and SPTs for Capital Seekers' Operated Assets

| | | Recommended SPT Trigger 1 | Recommended SPT Trigger 2 | Recommended SPT Trigger 3 | Recommended SPT Trigger 4 | Recommended SPT Trigger 5 | |
|------------------|--|--|---|--|--|--|--|
| Category | KPI | N+1 | N+2 | N+3 | N+4 | N+5 | |
| C O R E | CH ₄ Emissions Quantification Methodology | All CH ₄ emission sources for all material assets are calculated with generic emission factor-based methodologies. Operator also determines material emission sources, consistent with OGMP technical guidance protocols or an alternative that is deemed equivalent. ¹¹¹ ¹¹² | All material CH ₄ emission sources for all material assets are calculated using measurement based on representative sampling and/or engineering calculations with primary data. ¹¹³ ¹¹⁴ ¹¹⁵ Operators may also provide evidence that they are actively pursuing projects to determine source-level emissions from all material sources with the data described above, consistent with OGMP technical guidance protocols or an alternative that is deemed equivalent. Materiality for all sources must be reassessed and re-determined, consistent with OGMP technical guidance protocols or an alternative that is deemed equivalent. | All material CH ₄ emission sources for all material assets are calculated using measurement based on representative sampling and/or engineering calculations with primary data, consistent with OGMP technical guidance protocols or an alternative that is deemed equivalent. Materiality for all sources must be re-assessed and re-determined, consistent with OGMP technical guidance protocols or an alternative that is deemed equivalent. | All material CH ₄ emission sources for all material assets are calculated using representative sampling and/or engineering calculations with primary data, consistent with OGMP technical guidance protocols or an alternative that is deemed equivalent. >50% of assets have reconciled their source-level inventories with the results of site-level measurements, consistent with OGMP technical guidance protocols or an alternative that is deemed equivalent. Materiality for all sources must be re-assessed and re-determined, consistent with OGMP technical guidance protocols or an alternative that is deemed equivalent. | All material CH ₄ emission sources for all material assets are calculated using representative sampling and/or engineering calculations with primary data, consistent with OGMP technical guidance protocols or an alternative that is deemed equivalent. >90% of assets have reconciled their source-level inventories with the results of site-level measurements, consistent with OGMP technical guidance protocols or an alternative that is deemed equivalent. Materiality for all sources must be re-assessed and re-determined, consistent with OGMP technical guidance protocols or an alternative that is deemed equivalent. | |
| | CH ₄ Intensity Target | 100g CH ₄ /BOE. (for the upstream sector, including production, gathering, boosting, and processing) | No reporting against target, data quality too low | No reporting against target, data quality too low | 250g CH ₄ /BOE And/or equivalent in CH ₄ /Volume Gas Produced | 150g CH ₄ /BOE And/or equivalent in CH ₄ /Volume Gas Produced | 100g CH ₄ /BOE And/or equivalent in CH ₄ /Volume Gas Produced |
| | CH ₄ Absolute Target | Target should not exceed estimated total CH ₄ methane emissions for the baseline year | Targets above recommended to be determined based on the calculation methodology in the corresponding N+ trigger | | | | |
| | | To be calculated using CH ₄ intensity data sources above, and throughput determinations It is recommended that companies only set an absolute emissions target once they have developed a measurement-based source-level inventory equivalent to N+3. If absolute emissions do increase, it should be explained as to how this is due to an improvement in direct measurement and not an increase in overall emissions. | | | | | |

TABLE CONTINUES >

¹¹¹ Oil & Gas Methane Partnership 2.0, *Implementation Plan Guidance*, (Nairobi: United Nations Environment Programme, 2023), https://ogmpartnership.com/wp-content/uploads/2023/02/OGMP-2.0-Implementation-Plan-Guidance_2.pdf.

¹¹² Consistent with Fidelity Levels 3 and 4 of Table 2 of the Use of Proceeds Guidance document, the operator is encouraged to calculate sources at higher fidelity levels where data is available.

¹¹³ Data collection and emission-calculation methodologies should be consistent with Level 4 guidance provided by OGMP in its technical guidance protocols.

¹¹⁴ Oil & Gas Methane Partnership 2.0, *Technical Guidance Protocols*, (Nairobi: United Nations Environment Programme, 2022), <https://ogmpartnership.com/guidance-documents-and-templates/>.

¹¹⁵ Consistent with fidelity levels 1 and 2 of the Use of Proceeds Guidance document.

¹¹⁶ Delay of repair should be considered if it is determined that more total GHG emissions would result from shutting down equipment to complete repair compared with waiting until the next scheduled shutdown, using a 20-year GWP. Leaks under delay of repair must be monitored to ensure leak rates do not increase and calculations are updated to reflect an increase in leak size.

¹¹⁷ Maintenance and process venting includes sources such as equipment blowdowns during maintenance, liquid unloadings from gas wells, and any other event where process equipment is opened to the atmosphere to relieve pressure for any purpose.

| | | Recommended SPT Trigger 1 | Recommended SPT Trigger 2 | Recommended SPT Trigger 3 | Recommended SPT Trigger 4 | Recommended SPT Trigger 5 |
|---|--|--|--|---|---|--|
| Category | KPI | N+1 | N+2 | N+3 | N+4 | N+5 |
| C O R E | Large Methane Emission Monitoring and Abatement | Follow-up and response to all detections from third parties | Follow-up and response to all detections from third parties | Deployment of top-down, point-source detection technology at ≤50 kg/hr 1x/year, ≤100 kg/hr 4x/year or equivalent | Deployment of top-down, point-source detection technology at ≤50kg/hr 2x year, ≤100 kg/hr 8x/year or equivalent | Deployment of top-down detection at ≤50kg/hr 4x year, ≤100 kg/hr 12x/year or equivalent |
| | | Response, rectification, causal analysis and prevention of reoccurrence required for all detections. Achieved through use of root-cause analysis protocols for all detections, record-keeping, proof of repair and preventative procedures for all unexpected sources. Verified through technology deployment records/POs, deployment methodologies and capabilities, detection follow-up SOPs, detection records, RCA records, operator training, and additional third-party monitoring results. | | | | |
| | Flaring | 15 M ³ /BOE flaring intensity (or equivalent in Flared Volume/Volume Gas Produced) | 10 M ³ /BOE flaring intensity (or equivalent in Flared Volume/Volume Gas Produced) 3-year average absolute flaring volumes remain lower than baseline year | 7 M ³ /BOE flaring intensity (or equivalent in Flared Volume/Volume Gas Produced) 3-year average absolute flaring volumes remain lower than baseline year | 3.5 M ³ /BOE flaring intensity (or equivalent in Flared Volume/Volume Gas Produced) 3-year average absolute flaring volumes remain lower than baseline year | 2 M ³ /BOE flaring intensity (or equivalent in Flared Volume/Volume Gas Produced) 3-year average flaring volumes remain lower than baseline year |
| | Activities preventing routing flaring | Demonstrated through metered data and engineering calculations using primary data calculating the total gas volume sent to flare | | | | |
| S E C O N D A R Y | Major Methane Source Reductions | Establishment of leak detection and repair program following best industry practices with at least 1 survey per year following the program for all fugitive components at 50% of assets | At least 1 survey per year following the LDAR program for all fugitive components at all assets | At least 2 surveys per year following the LDAR program for all fugitive components at all assets | At least 3 surveys per year following the LDAR program for all fugitive components at all assets | At least 4 surveys per year following the LDAR program for all fugitive components at all assets |
| | | Repairs required for all emission sources detected unless delay of repair is granted until next scheduled shutdown for the equipment. ¹¹⁶ Must use Optical Gas Imaging (OGI) cameras or solutions with higher-performing probability of detection (PoD) curves by experienced and/or trained technicians. Verified through robust LDAR program by an experience professional following industry best practices and repair SOPs, LDAR training manuals/records, auditor observations of LDAR, submission of alternative survey results, repair logs. | | | | |
| | Well Completions/ Workovers: Prevention of emissions from Completions and Workovers from 95% of activities | Prevention of emissions from completions and workovers from 50% of activities | Prevention of emissions from completions and workovers from 60% of activities | Prevention of emissions from completions and workovers from 75% of activities | Prevention of emissions from completions and workovers from 90% of activities | Prevention of emissions from completions and workovers from >95% of activities |
| | | Demonstrated through Reduced Emissions Completions (RECs) practice at hydraulically fractured wells + use of equipment to capture gas and route to sales or reinjection, through SOPs, site visits, and third-party data | | | | |
| | Centrifugal Compressors: Prevention of excess centrifugal compressor venting emissions on 90% of compressors | Prevention of excess centrifugal compressor venting emissions on 25% of compressors | Prevention of excess centrifugal compressor venting emissions on 35% of compressors | Prevention of excess centrifugal compressor venting emissions on 50% of compressors | Prevention of excess centrifugal compressor venting emissions on 75% of compressors | Prevention of excess centrifugal compressor venting emissions on 90% of compressors |
| | | Demonstrated through conversion of compressor venting systems to dry seal degassing systems, annual flow measurement to ensure wet-seal degassing systems have a leak rate below 2 scfm or routing of degassing system vents to fuel, process, or a control device. | | | | |
| | Reciprocating Compressors: Prevention of reciprocating compressor venting emissions on 90% of compressors | Prevention of excess reciprocating compressor venting emissions on 15% of compressors | Prevention of excess reciprocating compressor venting emissions on 35% of compressors | Prevention of combustion and reciprocating compressor venting emissions on 50% of compressors | Prevention of reciprocating compressor venting emissions on 75% of compressors | Prevention of reciprocating compressor venting emissions on 90% of compressors |
| | | Demonstrated through annual flow measurement ensuring rod packing emissions <2 scfm, or replacement of rod packing each 8,760 hours of operation, or routing rod packing vents back to fuel, process or to a control device. | | | | |

TABLE CONTINUES >

Introduction

Guidance: Use-of-Proceeds Instruments

Guidance: KPI-Linked Instruments



| | | Recommended SPT Trigger 1 | Recommended SPT Trigger 2 | Recommended SPT Trigger 3 | Recommended SPT Trigger 4 | Recommended SPT Trigger 5 |
|---|--|--|--|--|--|---|
| Category | KPI | N+1 | N+2 | N+3 | N+4 | N+5 |
| S E C O N D A R Y | Major Methane Source Reductions | Routine stack testing and preventative maintenance strategies for 50% of reciprocating internal combustion engines, gas turbines and/or other gas powered energy sources | Routine stack testing and preventative maintenance strategies for 60% of reciprocating internal combustion engines, gas turbines and/or other gas powered energy sources | Routine stack testing and preventative maintenance strategies for 75% of reciprocating internal combustion engines, gas turbines and/or other gas powered energy sources | Routine stack testing and preventative maintenance strategies for 90% of reciprocating internal combustion engines, gas turbines and/or other gas powered energy sources | Routine stack testing and preventative maintenance strategies for >95% of reciprocating internal combustion engines, gas turbines and/or other gas powered energy sources |
| | Storage Tank Venting: Prevention of storage tank (hydrocarbon/ water) emissions on 95% of sites | Prevention of storage tank (hydrocarbon/ water) emissions on 15% of sites | Prevention of storage tank (hydrocarbon/ water) emissions on 35% of sites | Prevention of storage tank (hydrocarbon/ water) emissions on 55% of sites | Prevention of storage tank (hydrocarbon/ water) emissions on 85% of sites | Prevention of storage tank (hydrocarbon/ water) emissions on 95% of sites |
| | | Demonstrated through installation of control devices (capturing and routing emissions from tank batteries), centralized facilities, tankless facilities, installation of key pressure monitoring systems and alarms, through purchase orders, and site visits. Demonstrated through SOPs for managing tank emissions, routine inspection and maintenance of key sources (vapor recovery controllers, or VRCs, thief hatches, dump valves), including interviews and review of third-party data | | | | |
| | Maintenance and Process Venting: ¹¹⁷ Prevention of methane emissions from 95% of maintenance and process venting events | Prevention of methane emissions from 25% of maintenance and process venting events | Prevention of methane emissions from 50% of maintenance and process venting events | Prevention of methane emissions from 75% of maintenance and process venting events | Prevention of methane emissions from 90% of maintenance and process venting events | Prevention of methane emissions from 95% of maintenance and process venting events |
| | | Demonstrated through best management practices (BMP) minimizing volume/timing of blowdowns and unloadings > 100 scf/event, demonstrated reinjecting gas to sales lines, routing gas to flare systems, operator logs, purchase orders of compression/flare devices, and review of third-party surveys | | | | |
| | Gas Driven Pneumatic Devices and Pumps: 95% of a site's pneumatics inventory is a ventless or no-methane solution | 15% of sites' pneumatics inventory is a ventless or no-methane solution | 35% of sites' pneumatics inventory is a ventless or no-methane solution | 50% of sites' pneumatics inventory is a ventless or no-methane solution | 75% of sites' pneumatics inventory is a ventless or no-methane solution | 95% of sites' pneumatics inventory is a ventless or no-methane solution |
| | | Demonstrated through purchase orders, inventory logs, and site visits | | | | |
| | Flare Controls: Implementation of high efficiency flare controls, including monitoring of the main flame, over 95% of sites | Implementation of high efficiency flare controls, over 20% of sites | Implementation of high efficiency flare controls, over 40% of sites | Implementation of high efficiency flare controls, over 60% of sites | Implementation of high efficiency flare controls, including monitoring of the main flame, over 85% of sites | Implementation of high efficiency flare controls, including monitoring of the main flame, over 95% of sites |
| | | Demonstrated through design implementation routing gas to flares, control and engineering design, installation of SCADA + logic controllers to monitor flare ignition, auto ignition system, thermocouples, SOPs for flaring use/duration, flare management, surveys, and maintenance records for all flare installations | | | | |

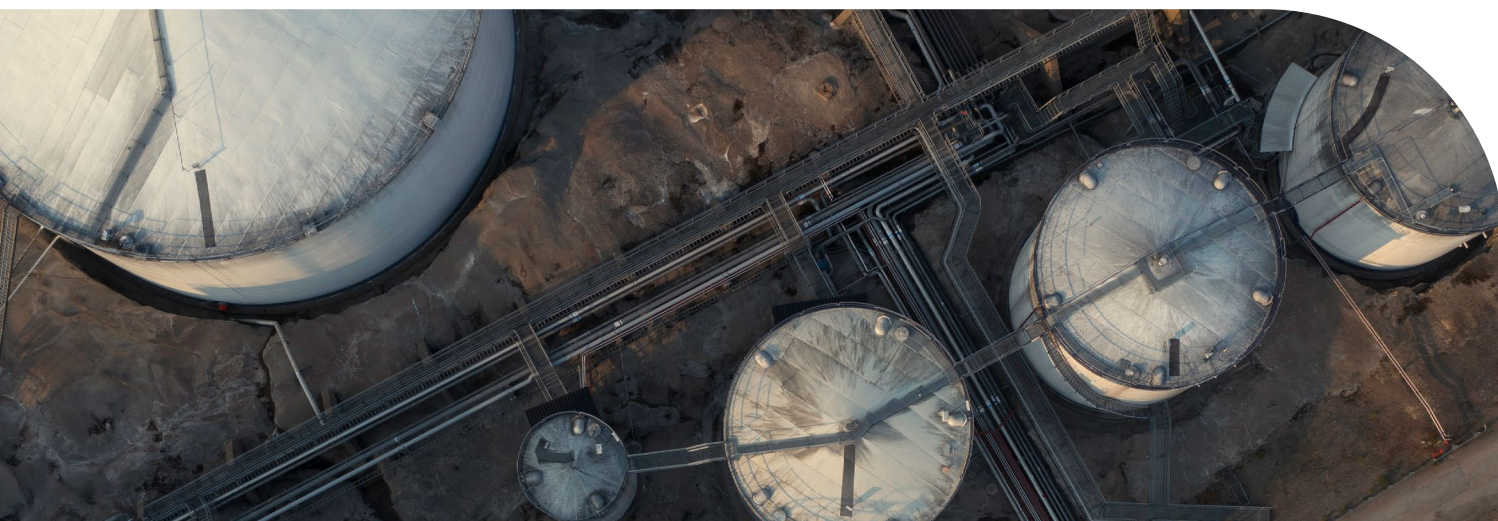


Table 2: Recommended Corporate KPI and SPTs for Capital Seekers' Non-Operated Assets

| | | Recommended SPT Trigger 1 | Recommended SPT Trigger 2 | Recommended SPT Trigger 3 | Recommended SPT Trigger 4 | Recommended SPT Trigger 5 |
|------------------|--|---|---|--|--|--|
| Category | KPI | N+1 | N+2 | N+3 | N+4 | N+5 |
| C O R E | CH₄ Emissions Quantification Methodology | All CH ₄ emission sources for all material assets are calculated with generic emission factor-based methodologies. Operator also determines material emission sources, consistent with OGMP technical guidance protocols or an alternative that is deemed equivalent. ¹¹⁸ | All material CH ₄ emission sources for all material assets are calculated using measurement based on representative sampling and/or engineering calculations with primary data. ^{119 120} Operators may also provide evidence that they are actively pursuing projects to determine source-level emissions from all material sources with the data described above, consistent with OGMP technical guidance protocols or an alternative that is deemed equivalent. Materiality for all sources must be reassessed and re-determined, consistent with OGMP technical guidance protocols or an alternative that is deemed equivalent. | All material CH ₄ emission sources for all material assets are calculated using measurement based on representative sampling and/or engineering calculations with primary data, consistent with OGMP technical guidance protocols or an alternative that is deemed equivalent. Materiality for all sources must be re-assessed and re-determined, consistent with OGMP technical guidance protocols or an alternative that is deemed equivalent. | All material CH ₄ emission sources for all material assets are calculated using representative sampling and/or engineering calculations with primary data, consistent with OGMP technical guidance protocols or an alternative that is deemed equivalent. >50% of assets have reconciled their source-level inventories with the results of site-level measurements, consistent with OGMP technical guidance protocols or an alternative that is deemed equivalent. Materiality for all sources must be re-assessed and re-determined, consistent with OGMP technical guidance protocols or an alternative that is deemed equivalent. | All material CH ₄ emission sources for all material assets are calculated using representative sampling and/or engineering calculations with primary data, consistent with OGMP technical guidance protocols or an alternative that is deemed equivalent. >90% of assets have reconciled their source-level inventories with the results of site-level measurements, consistent with OGMP technical guidance protocols or an alternative that is deemed equivalent. Materiality for all sources must be re-assessed and re-determined, consistent with OGMP technical guidance protocols or an alternative that is deemed equivalent. |
| | CH₄ Intensity Target | 100g CH₄/BOE. (for the upstream sector, including production, gathering, boosting, and processing) | No reporting against target, data quality too low | No reporting against target, data quality too low | 250g CH ₄ /BOE And/or equivalent in CH ₄ /Volume Gas Produced | 150g CH ₄ /BOE And/or equivalent in CH ₄ /Volume Gas Produced |
| | | Targets above recommended to be determined based on the calculation methodology in the corresponding N+ trigger | | | | |
| | CH₄ Absolute Target | Target should not exceed estimated total CH₄ methane emissions for the baseline year | To be calculated using CH ₄ intensity data sources above, and throughput determinations It is recommended that companies only set an absolute emissions target once they have developed a measurement-based source-level inventory equivalent to N+3. If absolute emissions do increase, it should be explained as to how this is due to an improvement in direct measurement and not an increase in overall emissions. | | | |
| | Large Methane Emission Monitoring and Abatement | Top-Down Monitoring and Root-Cause Analysis: Deployment of top-down detection at <=50kg/hr 3x year, <=100 kg/hr 12x/year or equivalent | Follow-up and response to all detections from third parties | Follow-up and response to all detections from third parties | Deployment of top-down, point-source detection technology at <=50 kg/hr 1x/year, <=100 kg/hr 4x/year or equivalent | Deployment of top-down, point-source detection technology at <=50kg/hr 2x year, <=100 kg/hr 8x/year or equivalent |
| | | | Response, rectification, causal analysis and prevention of reoccurrence required for all detections. Achieved through use of root-cause analysis protocols for all detections, record-keeping, proof of repair and preventative procedures for all unexpected sources. Verified through technology deployment records/POs, deployment methodologies and capabilities, detection follow-up SOPs, detection records, RCA records, operator training, and additional third-party monitoring results. | | | |

TABLE CONTINUES >

| | | Recommended SPT Trigger 1 | Recommended SPT Trigger 2 | Recommended SPT Trigger 3 | Recommended SPT Trigger 4 | Recommended SPT Trigger 5 |
|---|---------------------------------------|--|--|---|---|--|
| Category | KPI | N+1 | N+2 | N+3 | N+4 | N+5 |
| C O R E | Flaring | 15 M ³ /BOE flaring intensity (or equivalent in Flared Volume/Volume Gas Produced) | 10 M ³ /BOE flaring intensity (or equivalent in Flared Volume/Volume Gas Produced) 3-year average absolute flaring volumes remain lower than baseline year | 7 M ³ /BOE flaring intensity (or equivalent in Flared Volume/Volume Gas Produced) 3-year average absolute flaring volumes remain lower than baseline year | 3.5 M ³ /BOE flaring intensity (or equivalent in Flared Volume/Volume Gas Produced) 3-year average absolute flaring volumes remain lower than baseline year | 2 M ³ /BOE flaring intensity (or equivalent in Flared Volume/Volume Gas Produced) 3-year average flaring volumes remain lower than baseline year |
| | Activities preventing routing flaring | Demonstrated through metered data and engineering calculations using primary data calculating the total gas volume sent to flare | | | | |
| S E C O N D A R Y | Major Methane Source Reductions | Establishment of leak detection and repair program following best industry practices with at least 1 survey per year following the program for all fugitive components at 50% of assets | At least 1 survey per year following the LDAR program for all fugitive components at all assets | At least 2 surveys per year following the LDAR program for all fugitive components at all assets | At least 3 surveys per year following the LDAR program for all fugitive components at all assets | At least 4 surveys per year following the LDAR program for all fugitive components at all assets |
| | | Repairs required for all emission sources detected unless delay of repair is granted until next scheduled shutdown for the equipment. ¹¹⁸ Must use Optical Gas Imaging (OGI) cameras or solutions with higher-performing probability of detection (PoD) curves by experienced and/or trained technicians. Verified through robust LDAR program by an experience professional following industry best practices and repair SOPs, LDAR training manuals/records, auditor observations of LDAR, submission of alternative survey results, repair logs. | | | | |

¹¹⁸ Oil & Gas Methane Partnership 2.0, Implementation Plan Guidance.

¹¹⁹ Data collection and emission-calculation methodologies should be consistent with Level 4 guidance provided by OGMP in its technical guidance protocols.

¹²⁰ Oil & Gas Methane Partnership 2.0, Technical Guidance Protocols.



3.1 Target-Setting Considerations Based on Capital Seeker Category

Different types of capital seekers are at various stages of readiness for the implementation of methane abatement programs, depending on their geography, tenure in the industry, status of regional regulations, ownership, and funding structures. To accommodate this variation, the Guidance aims to provide flexibility for capital seekers to select KPIs that are appropriately suited to their technical and financial capabilities, while still ensuring a sufficient level of ambition.

While the final selection of KPIs will be determined by the capital seeker, likely in consultation with structuring agents, investors, and technical subject matter experts, below are a few suggested criteria that capital seekers and their stakeholders may consider in the design and selection of their KPIs:

- **New vs. existing producers:** The production of oil and gas at new facilities enables the incorporation of low-emission technologies into facility design from the outset, the selection of best-in-class equipment, and potentially a more comprehensive understanding of an operator's emissions inventory. Capital seekers with significant production from newer facilities should consider selecting more ambitious KPIs and SPTs.
- **Well-capitalized entities vs. poorly capitalized entities:** Capital seekers with ready access to capital may be able to more quickly deploy capital for methane abatement projects, allowing them to set and achieve more ambitious KPIs and SPTs.
- **Capital seekers from developed countries vs. developing or least developed countries:** Capital seekers in higher-income countries may have greater access to tax incentives, grant programs, or other governmental support that can support abatement programs, allowing them to set more ambitious KPIs and SPTs. When setting KPIs and SPTs, capital seekers, investors, second-party opinion (SPO) providers, and other stakeholders may also consider potential global North-South equity implications, where wealthier countries may be viewed as responsible for assuming a greater share of the emissions reduction burden.

3.1.1 Calibrating KPIs for Non-Operated Assets

Joint venture structures dominate global oil and gas production. A company's non-operated joint ventures (NOJVs) are financial arrangements wherein a company owns a beneficial financial interest but does not have ownership control of the operations. On average, non-operated joint ventures account for half of International Oil Company (IOC) equity production.¹²¹ For this reason, it is essential for material emissions from NOJVs to be included in company targets, disclosures, and KPI-linked financing.

Where capital seekers derive material production volumes or revenues from NOJVs, the Guidance recommends including KPIs for both operated and non-operated assets. Capital seekers may consider separate KPIs for NOJVs or enterprise-wide KPIs that encompass both non-operated and operated assets (e.g., on an equity basis or using another relevant metric).

¹²¹ Environmental Defense Fund, Shared Duty: National, International Oil Companies Bound Together by Methane Obligations (New York: Environmental Defense Fund, 2024), <https://business.edf.org/wp-content/blogs.dir/90/files/EDF-Shared-Duty-JV-IOC-NOC.pdf>.

The Guidance acknowledges that there could be barriers to securing methane emissions reductions from NOJVs relating to contractual, import, technological, financial, legal, policy, or reporting issues. Given these and other potential challenges, it is understood that capital seekers might set more flexible KPIs for non-operated joint ventures. However, capital seekers should nonetheless be expected to undertake “reasonable and demonstrable” efforts (defined below) toward achieving these targets, leveraging relationships to influence ventures to measure, report, and ultimately mitigate methane emissions.

The Guidance recommends the United Nations’ Environment Programme’s (UNEP) Oil and Gas Methane Partnership (OGMP) 2.0 *Guidance on Venture Engagement—Reasonable and Demonstrable Efforts* as the primary reference for capital seekers to consider when defining “reasonable and demonstrable” efforts.¹²² The document was produced by the OGMP 2.0 Task Force on Venture Engagement and represents a principles-based consensus approach between industry and civil society on what should be expected of companies as they endeavor to influence non-operated joint ventures to move up OGMP 2.0’s reporting levels.¹²³ The document envisages a series of approaches that can be adapted across ventures, each with unique requirements and challenges.

The relevant criteria for potential capital seekers to draw from the OGMP 2.0 guidance for “reasonable” efforts are below:

- **Completeness:** Prioritizing efforts that will have the greatest impact on their methane emissions reporting and reduction objectives.
- **Company efforts:** Strategic actions taken across a member company’s portfolio of ventures.
- **Venture-specific efforts:** Actions that are aimed at a specific venture.

The criteria for “demonstrable” efforts include:

- Disclosure of non-operated assets (including percentage equity) and an **overview of the company’s credible commitment and plan** to influence joint ventures to meet KPIs.
- **Reporting of progress against KPIs** in venture engagements, with an expectation of improvement in line with performance trigger dates.
- **Documentation of efforts** for each material venture. Best-in-class efforts would include explaining known barriers and mitigating efforts for material ventures in the implementation plan and updating it annually thereafter.

It is recommended that capital seekers report their “reasonable and demonstrable” efforts either publicly or to a qualified third-party reviewer. For examples of “reasonable and demonstrable efforts” that could be referenced by capital seekers, please see the full document from OGMP 2.0 which will be published on their [resources page](#) when available.

Capital seekers, financial intermediaries, and external reviewers may also consider referencing or leveraging the following resources from the Methane Guiding Principles Playbook to Engage Partners¹²⁴ including:

- *Model Methane Reduction Subcommittee Charter*
- *Model Greenhouse Gases Emissions Committee Charter for Oil and Gas Joint Ventures*
- *Template for Contract Clauses Meant to Manage and Reduce Emissions in Joint Ventures*

¹²² Oil & Gas Methane Partnership 2.0, “Resources,” Oil & Gas Methane Partnership 2.0, <https://www.ogmpartnership.org/resources>.

¹²³ Under the OGMP 2.0 Reporting Framework’s section “4.2.1 Venture reporting,” OGMP 2.0 member companies are required to make “reasonable and demonstrable efforts” toward achieving Gold Standard for non-operated assets.

¹²⁴ Methane Guiding Principles, “Influencing Joint Ventures: MGP Launches Playbook to Engage Partners,” Methane Guiding Principles, 2024, <https://methaneguidingprinciples.org/news/influencing-joint-ventures-mgp-launches-playbook-to-engage-partners/>.

3.2 Technical Considerations for KPI Selection

Table 3 below provides high-level recommendations for choosing Secondary KPIs based on the capital seeker’s level of technical familiarity with their methane emissions profile before accessing capital markets for abatement. Capital seekers meeting criteria across more than one category are strongly encouraged to default to the guidance for the category representing the lower level of familiarity.

| Table 3: Guidance for Selection of Secondary KPIs Based on Current State of Emissions Inventory | | |
|---|---|---|
| | Description | Guidance |
| <div> <div> <div></div> <div>High</div> </div> <div> <div></div> <div>Medium</div> </div> <div> <div></div> <div>Low</div> </div> </div> <div>Familiarity with Methane Risk</div> | <p>Capital seeker has:</p> <ul style="list-style-type: none"> Completed a detailed inventory of specific emissions sources across all operating assets corporate wide, applying measurement studies at the source and site level. Firm understanding of sources and assets that pose a significant risk for methane emissions through detailed analysis. Completed strategy for addressing methane abatement, including cost (measurement-based MACC studies) and construction estimates. Committed publicly to specific abatement projects and timelines based on measurement-informed inventories. | <p>Capital seekers are recommended to only select Core KPIs if they can provide evidence that the capital seeker has procured the data, costing, and completed the analysis necessary to meet the target SPTs with maximum flexibility in execution.</p> |
| | <p>Capital seeker has:</p> <ul style="list-style-type: none"> Conducted corporate-wide inventories based on generic emission factors. Made public commitments, such as percent reductions against a historic baseline using generic emission factor inventories or commitments describing plans to reduce only specific sources. Some operating assets inside well-regulated geographies and some assets and NOJVs in regions with limited methane regulation suggesting non-ubiquitous application of best methane practices corporate-wide. | <p>Capital seeker recommended to include all relevant Secondary KPIs as part of their financial agreement to ensure a commitment to addressing all potential methane sources, particularly those that may not be highlighted from rudimentary emission inventories. Capital seekers that have made public commitments to address only certain sources should consider adding all remaining source-specific KPIs to demonstrate their commitment to comprehensive methane abatement.</p> |
| | <p>Capital seeker has:</p> <ul style="list-style-type: none"> Not yet completed a detailed inventory of corporate-wide emissions by source. Not yet enacted on any publicly available or third-party super-emitter data sources. Made commitments to methane reductions but not developed a strategy for reductions. | <p>The capital seeker is recommended to include all relevant Secondary KPIs to ensure a commitment to addressing all potential methane sources. Capital seekers may consider raising capital via UoP instruments as a first recourse to better understand their emissions profile before pursuing a KPI-linked instrument.</p> |

3.3 Technical Considerations for Sustainability Performance Target Selection

Table 4 below provides recommendations for capital seekers to consider during the development of their final and intermediate SPTs (targets).

Table 4: Guidance for Selection of Final and Intermediate SPTs

| KPI | Considerations taken before setting targets | Final target considerations | Intermediate target considerations |
|--|--|--|--|
| CH₄ Intensity and Absolute CH₄ Targets (Core) | <p>Capital seekers should recognize that methane emissions determined through reconciled source- and site-level measurement studies will be required as part of an iterative process of target setting in line with increasing data quality. Therefore, capital seekers should have a plan in place to improve emissions data quality and achieve measurement-based quantification over all of their assets.</p> <p>To start, capital seekers are recommended to complete a full emission factor (OGMP L3¹²⁵ or equivalent) corporate methane inventory. Multiple software programs and expert consultants are available to support completion of this exercise in short order, including the MIST¹²⁶ program which is free for oil and gas operators in the upstream, midstream, and downstream sector. Capital seekers with existing emissions quantification estimates using even rudimentary (generic emission factor) inventories will likely have sufficient understanding of emissions sources to commit to final and intermediate targets, even if these emissions estimates may be initially insufficient for robust baselining.</p> <p>Sufficient studies^{127 128 129} present the relative uncertainty from generic emission factor-based inventories that should be taken into consideration when setting targets.</p> <p>Capital seekers with public commitments to emission reductions (%) against a baseline should consider converting to absolute emissions or intensity targets as part of target-setting exercise.</p> | <p>Best-in-class emission intensity targets have been established in regulatory and voluntary frameworks throughout the oil and gas industry, including Oil and Gas Climate Initiative (OGCI),¹³⁰ U.S. Environmental Protection Agency (US EPA) waste emission charge,¹³¹ Colorado Intensity verification rule,¹³² and the MiQ methane performance standard. Each best-in-class intensity target is deemed achievable by their respective authorities.</p> <p>It is recommended that capital seekers set an intensity target at the start of their mitigation program, even if they may not report against the target until they have a robust measurement-based emissions inventory. Capital seekers are recommended to determine the time (in years) needed to dependably achieve and transparently document their best-in-class intensity targets considering (1) their own performance over time, (2) their ability to mobilize on operational and capital projects, (3) guidance from methane abatement consultants or service providers using industry-wide benchmarking studies.</p> | <p>Due to the near-term climate impact of methane emissions as a greenhouse gas, capital seekers are incentivized to maximize abatement efforts in the shortest achievable timeframe.</p> <p>Therefore, intermediate targeted timelines should be set at a decline rate equal to or more ambitious than final targets.</p> <p>Capital seekers that can achieve major reductions in 2 or 3 years through the deployment of lower-cost, operationally focused abatement activities, are strongly encouraged to do so even if the time period to achieving a final KPI target will necessarily be extended by a few additional years to make way for more costly capital projects.</p> <p>Should the emission source that a SPT is targeting be initially estimated via generic emission factors, then the capital seeker is encouraged to conduct a limited measurement campaign to validate the impact of the emission source prior to aggressive investment into source reduction.</p> |
| Large Methane Emission Monitoring and Abatement (Core) | <p>Among a range of other activities, operating at low pressures, operating hydrocarbon storage tanks, operating flares, producing associated gas, or separating produced water pose a high risk of super-emitter emissions events.</p> <p>Capital seekers should also be aware of existing satellite and third-party data sources over their assets and reporting platforms used. Capital seekers should also begin evaluating private monitoring data options with regional and global coverage capable of identifying large methane emission events. Public platforms such as CarbonMapper,¹³³ MethaneSAT,¹³⁴ and IMEO's MARS¹³⁵ are currently available. Capital seekers should be prepared to develop a methane-detection response program to properly follow up, investigate, repair, record, and take steps to prevent future super-emitter emissions from detected sources.</p> | <p>Best-in-class methane performance programs and regulatory frameworks, including US EPA OOOOb/c,¹³⁶ Methane Guiding Principles Best Practice Guides,¹³⁷ encourage frequent monitoring coverage to address persistent and episodic large emission events. The amount of potential abated emissions from super-emitter detections will depend on the type of operating basin and the distribution of emission sizes found from that region. Capital seekers are encouraged to identify fit-for-purpose monitoring solutions that best address their type of operations and emissions profile, possibly through monitoring vendor suggestions, monitoring equivalency tools (FEAST,¹³⁸ LDARsim¹³⁹), or equivalency determination guidelines (MiQ¹⁴⁰).</p> | <p>Capital seekers should consider that successful deployment of super-emitter monitoring detection programs must be backed by follow-up procedures, data collection, and demonstrated emission reductions. Capital seekers should prioritize successfully and meaningfully responding to less frequent or higher MDL monitoring surveys ahead of deployment of more surveys without proper follow-up.</p> |

TABLE CONTINUES >

| KPI | Considerations taken before setting targets | Final target considerations | Intermediate target considerations |
|--|--|--|--|
| Flaring Intensity Target (Core) | <p>Capital seekers who produce associated gas, routinely flare gas, or who only flare controlled emissions or in emergency situations, will need to fully understand their flaring flow rates through high-quality metering.</p> <p>Capital seekers who operate inside regulatory or voluntary regimes that permit no routine flaring should understand the impact these conditions have on their asset-level and corporate-level flaring intensity.</p> <p>Capital seekers should evaluate the costs and timelines to implement capital projects for the reinjection, productive usage, or sales of gas.</p> | <p>Best-in-class flaring intensity targets have been proposed by various climate and energy think tanks (EDF,¹⁴¹ IEA¹⁴²) as well as studies of best-performing operations. (World Bank,¹⁴³ Capterio,¹⁴⁴ Darcy Partners¹⁴⁵).</p> <p>Capital seekers are encouraged to seek out project-specific financing (i.e., UoP bonds, or World Bank¹⁴⁶ funds) to achieve maximum flaring abatement.</p> | <p>Capital seekers are encouraged to evaluate near-term solutions for avoidance of natural gas flaring, such as through temporary gas storage and reinjection in depleted reservoirs.</p> |
| Major Methane Source Reductions (Secondary) | <p>This category addresses major sources such as fugitives, emissions from well completions, well workovers, compressor stations, combustion sources, tank batteries, blowdowns, unloadings, pneumatic devices, and inefficient flaring.</p> <p>The Guidance recommends looking at each emissions category first at an equipment and activity level, then determining an achievable pace of implementing reductions, followed by evaluating this impact on overall methane emissions and intensity targets. If additional expertise is required, the Guidance recommends capital seekers consult with methane mitigation consultants to understand how to calibrate reductions to meet overall KPIs.</p> | <p>Capital seekers should recognize that achievement of best-in-class methane intensity targets will require near-total abatement of major emission sources, as reflected in the recommended matrix (Table 1 and 2).</p> <p>Capital seekers may consider the time needed to dependably achieve near-total abatement activities for each of their major methane source considering (1) their own performance over time, (2) their ability to mobilize on operational and capital projects, (3) guidance from methane abatement consultants or service providers using industry-wide benchmarking studies.</p> | <p>Some major emission categories (i.e., fugitives, blowdowns, unloadings) will be easiest to abate in short-order due to lower-cost or low-tech implementations. As a result, capital seekers are encouraged to set ambitious targets and timelines for lower cost or higher payback activities.</p> <p>Capital seekers are encouraged to provide multiple intermediate targets to showcase continuous improvement and reflect a realistic pace of activity. Ambitious targets and timelines over multiple emission categories (Secondary KPIs) may be weighed more heavily than overall Core KPIs targets (i.e., methane intensity) that take longer to deliver.</p> |

¹²⁵ Oil & Gas Methane Partnership 2.0. “Resources.” Oil & Gas Methane Partnership 2.0, United Nations Environment Programme, <https://www.ogmpartnership.org/resources?%5B0%5D=reporting%3A9>.

¹²⁶ Methane Guiding Principles, “Methane Intensity Strategic Tool (MIST),” Methane Guiding Principles, accessed June 14, 2025, <https://methaneguidingprinciples.org/resources/mist-tool/>.

¹²⁷ David T. Allen, “Methane emissions from natural gas production and use: Reconciling bottom-up and top-down measurements,” *Current Opinion in Chemical Engineering* 5 (2014): 78–83, <https://doi.org/10.1016/j.coche.2014.05.004>.

¹²⁸ Brandt, A. R., Heath, G. A., Kort, E. A., O’Sullivan, F., Pétron, G., Jordaan, S. M., ... Harriss, R. (2014). Methane Leaks from North American Natural Gas Systems. *Science*, 343(6172), 733–735. <https://doi.org/10.1126/science.1247045>

¹²⁹ Jeffrey S. Rutherford et al., “Closing the methane gap in US oil and natural gas production emissions inventories,” *Nature Communications* 12, no. 1 (2021): 4715, <https://doi.org/10.1038/s41467-021-25017-4>.

¹³⁰ Oil and Gas Climate Initiative, “Methane intensity target,” Oil and Gas Climate Initiative, accessed June 14, 2025, <https://www.ogci.com/methane-emissions/methane-intensity-target>.

¹³¹ U.S. Environmental Protection Agency, “Examples of Calculations for Proposed Methane Emission Rate from a Well Completion (MERP-WEC) Standard,” January 2024, https://www.epa.gov/system/files/documents/2024-01/merp_wec_proposal-calculation-examples-memo.pdf.

¹³² Colorado Air Quality Control Commission, *Regulation Number 7*, 5 Colo. Code Regs. § 1001-26 (2024), <https://www.sos.state.co.us/CCR/GenerateRulePdf.do?ruleVersionId=10356&fileName=5%20CCR%201001-26>.

¹³³ Carbon Mapper, *Data Portal*, (Pasadena: Carbon Mapper, 2025), <https://data.carbonmapper.org/#1/30.8/50.5>.

¹³⁴ MethaneSAT, *MethaneSAT*, (New York: Environmental Defense Fund, 2025), <https://www.methanesat.org/>.

¹³⁵ United Nations Environment Programme, *Methane Alert and Response System*, (Nairobi: UNEP, 2025), <https://methanedata.unep.org/plumemap?mars=false>.

¹³⁶ Environmental Protection Agency, “Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review,” *Federal Register* 89, no. 47 (March 8, 2024): 16934–556, <https://www.federalregister.gov/documents/2024/03/08/2024-00366/standards-of-performance-for-new-reconstructed-and-modified-sources-and-emissions-guidelines-for>.

¹³⁷ Methane Guiding Principles, *Best Practices*, (London: Methane Guiding Principles, 2025), <https://methaneguidingprinciples.org/resources/best-practices/>.

¹³⁸ Stanford University Environmental Assessment & Optimization, *FEAST: Fugitive Emissions Abatement Simulation Toolkit*, (Stanford: Stanford University, 2023), <https://eao.stanford.edu/research-project/feast>.

¹³⁹ Highwood Emissions Management, *LDAR-Sim*, (Calgary: Highwood Emissions Management, 2025), <https://highwoodemissions.com/tools/ldar-sim/>.

¹⁴⁰ MIQ, *MIQ Equivalency Table*, (London: MIQ, 2024), <https://miq.org/document/miq-equivalency-table/>.

¹⁴¹ Environmental Defense Fund, *The Burning Question: How to Fix Flaring*, (New York: Environmental Defense Fund, 2024), <https://business.edf.org/insights/the-burning-question-how-to-fix-flaring/>.

¹⁴² International Energy Agency, *Gas Flaring*, (Paris: IEA, 2025), <https://www.iea.org/energy-system/fossil-fuels/gas-flaring>.

¹⁴³ World Bank, *Global Gas Flaring Data*, (Washington, D.C.: World Bank, 2024), <https://www.worldbank.org/en/programs/gasflaringreduction/global-flaring-data>.

¹⁴⁴ FlareIntel, “Gas flaring shows modest improvement, but not in the countries that matter most,” <https://flareintel.com/insights/gas-flaring-shows-modest-improvement-but-not-in-the-countries-that-matter-most>.

¹⁴⁵ Darcy Partners, “Flaring Leaders & Laggards: EDF Analysis Highlights Performance Differences Across the Permian,” Darcy Partners, October 11, 2023, <https://darcypartners.com/research/flaring-leaders-laggards-edf-analysis-highlights>.

¹⁴⁶ World Bank, About the “Zero Routine Flaring by 2030” Initiative (Washington, D.C.: World Bank, 2025), <https://www.worldbank.org/en/programs/zero-routine-flaring-by-2030/about>.

3.4 Considerations for the Mergers and Acquisitions Impacts on KPI and SPT Achievement

Mergers and acquisitions are a core business component of the oil and gas industry.^{147 148} However, there is a potential risk that KPIs set by a capital seeker may incentivize the sale of higher-emitting assets, potentially to companies with weaker climate disclosure and operational standards.

This “transferred emissions” scenario may lead to greater overall climate impact and less transparency for investors, even if the capital seeker is able to meet its own emissions reduction targets.¹⁴⁹ Conversely, the acquisition of emissions-intensive assets by a capital seeker with pre-existing KPI commitments under a financial loan or bond issuance may alter the capital seeker’s ability to hit its targets in the pre-agreed timeframe. If acquired assets are excluded from entity-level targets and KPIs, this may raise questions about the capital seeker’s overall commitment to decarbonization.

To address these questions, the Guidance proposes the following recommendations for capital seekers regarding the acquisition and divestment of assets.

Recommendations for Divestment of Assets

The Guidance’s recommendations for divestments below are largely drawn from the *Climate Principles for Oil and Gas Mergers and Acquisitions*,¹⁵⁰ derived from roundtable discussions with members of the oil and gas industry, and financial sector parties involved in transactions. These recommendations are intended as a minimum standard to limit transferred emissions risk, with capital seekers encouraged to pursue all steps to ensure that their own decarbonization leads to overall real-world emissions reductions.

- **Pre-Deal Due Diligence:** Diligence on acquirers should be performed prior to the initiation of deals, including an assessment of both the climate standards and the financial strength of potential buyers to manage environmental impacts. This assessment should screen out acquirers without the ability to operate an asset to high environmental standards. Assessments should be publicly disclosed, with the possibility for a Second Party Opinion (SPO) review to provide additional credibility for stakeholders.
- **Disclosure:** Public reporting of emissions and environmental impact of the transferred asset should continue after the transaction, and parties should make clear what portion of emissions reduction is due to the asset transfer as opposed to abatement. Capital seekers are further strongly encouraged to pursue third-party verification of emissions and emissions reduction practices after the asset sale for a period.
- **Emissions Reduction Targets and Strategy:** Sellers should assist buyers in maintaining or strengthening a transferred asset’s reduction targets and strategy by sharing best practices, and buyers should commit to continuity in standards when executing a purchase.
- **Decommissioning:** Both buyer and seller should ensure that at the time of sale, the eventual costs and associated liability with any future decommissioning of transferred assets are valued, fully provisioned for, and disclosed.
- **Rebaselining:** Where relevant for select KPIs and SPTs, capital seekers should endeavor to reassess targets and recalculate new baselines (for absolute and intensity targets) post-divestment that are of equal or greater ambition than the previous targets. Considerations may be given to the capital seeker’s ability to further drive emissions reductions in the post-divestiture asset base, as in some circumstances it may be more challenging to drive emissions reductions at better-performing assets where fewer “low-hanging fruit” abatement opportunities may be available.

¹⁴⁷ Mergers and acquisitions should be understood as broadly covering mergers, acquisitions, divestitures, equity transactions, asset transfers, and potentially other energy transactions.

¹⁴⁸ Bain & Company, *Global Energy and Natural Resources M&A Report 2025*, (Boston: Bain & Company, 2025), <https://www.bain.com/insights/energy-and-natural-resources-m-and-a-report-2025/>.

¹⁴⁹ Environmental Defense Fund, *Transferred Emissions: How Oil & Gas M&A Can Hamper the Energy Transition*, (New York: Environmental Defense Fund, 2023), <https://business.edf.org/wp-content/uploads/2023/09/Transferred-Emissions-How-Oil-Gas-M-A-Hamper-Energy-Transition.pdf>.

¹⁵⁰ Environmental Defense Fund, *Climate Principles for Oil & Gas Mergers and Acquisitions*.

Recommendations for Acquisition of Assets

The Guidance recommends capital seekers consider the following points upon the acquisition of assets that may be materially relevant to a bond issuance or loan.

- **Reporting:** Public reporting of emissions and environmental impact should continue (or begin if it is not being done already) after the transaction, and parties should make clear what portion of the potential emissions increase is due to transfers as opposed to other factors.
- **Rebaselining:** Where relevant for select KPIs, capital seekers should incorporate acquired assets into their overall emissions reduction program and endeavor to reassess targets and recalculate new baselines (for absolute and intensity targets) post-acquisition that are of equal or greater ambition than the previous targets. Considerations may be given to the quality of methane emissions data for the acquired assets, which may be insufficient for robust baselining, as well as to the ability of the acquired asset base to achieve emissions reductions in line with existing ambitions. For example, capital seekers may not have reliable equipment counts and/or emissions inventories from previous owners, nor will they have their own emissions mitigation best practices in place. Both of these may delay the timeframe for the achievement of emissions reduction goals.



“Transferred emissions” from M&A may lead to higher overall emissions and less transparency for investors, even if it can help individual companies meet their own climate targets.

3.5 Considerations for Pre-Transaction Disclosures on Target Setting

As recommended by ICMA's SLBP, prior to a bond issuance or loan, operators are encouraged to align targets and KPIs under the instrument with publicly disclosed sustainability commitments (e.g., through corporate ESG reporting or sovereign Nationally Determined Contributions (NDCs).) In the case of methane abatement, commitments to voluntary programs such as Oil and Gas Methane Partnership (OGMP 2.0), the Oil and Gas Decarbonization Charter (OGDC), World Bank Zero Routine Flaring,¹⁵¹ and the Oil and Gas Climate Initiative's (OGCI) Aiming for Zero initiative,¹⁵² represent public disclosure that should align with the Guidance's targets.

Capital seekers are encouraged to publicly disclose the details of their committed targets, including:

- Absolute Methane Emissions, Methane Intensity Targets,¹⁵³ Flaring Intensity Targets, and timelines for the target achievement, potentially including intermediate SPTs.
- The motivation for the targets (i.e., ambition level, consistency with overall strategic planning, sustainable development policies, and benchmarking approach).
- The potential change of financial and/or structural characteristics and the trigger events leading to such a change.
- Intended post-transaction reporting and independent verification.

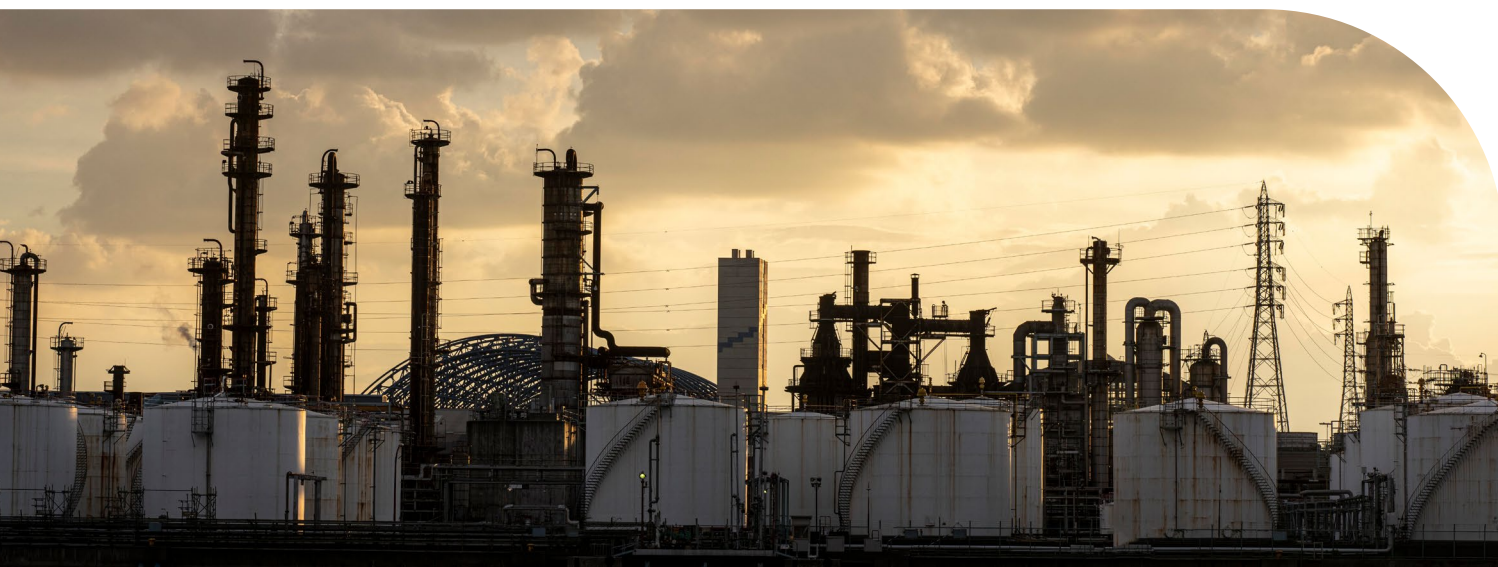
Capital seekers are also encouraged to, in alignment with the SLBP, provide details outlining how the entity intends to achieve targets, potentially including:

- Specific abatement activities to address source categories and their quantitative contribution toward total methane abatement.
- Capacity building, training, and educational efforts, or other broader entity-wide efforts to align culture and capabilities with the achievement of the targets.
- Alignment of corporate or governmental incentive structures with the achievement of targets.
- The motivation for the size of the step-up feature and why it represents a meaningful incentive to achieve the SPT.
- Potential risks or factors beyond the capital seeker's direct control that may affect the achievement of the SPTs.

¹⁵¹ World Bank, *Zero Routine Flaring by 2030*, (Washington, D.C.: World Bank, 2025), <https://www.worldbank.org/en/programs/zero-routine-flaring-by-2030>.

¹⁵² Oil and Gas Climate Initiative, *Aiming for near zero methane emissions from operated oil and gas assets*.

¹⁵³ Due to the inaccurate nature of most current corporate methane baselines, capital seekers must avoid baseline reduction estimates or reference points that are not determined from reconciled, measurement-based inventories.



4 POST-TRANSACTION REPORTING

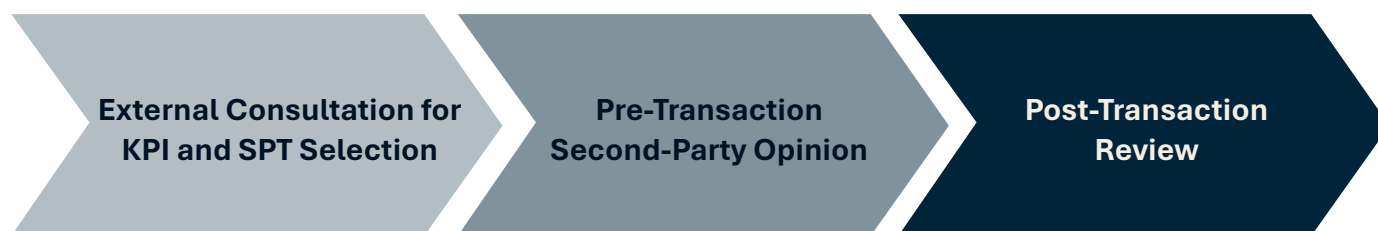
The Guidance strongly recommends post-transaction reporting in line with ICMA’s SLBP. The following reporting criteria are recommended to be published on an annual basis, in addition to the reporting requirements laid out under the SLBP:

- Quantification metrics set out in the recommended KPIs include increasing data quality requirements prescribed over time.
- Verifiable evidence supporting data quality used in methane emission quantification, flaring volumes, production volumes, satellite detection follow-up and repair, LDAR deployment, and source category record-keeping.
- Details of the verification process undertaken, including the verifier’s information as well as any gaps, recommendations, or areas of improvement pointed out by the verifier. See [Section 5](#) below for more information on verification.
- Disclosure referencing alignment of KPIs and SPTs with other voluntary commitments or regulatory requirements.



5 EXTERNAL REVIEW AND VERIFICATION

Verification of capital seekers' KPIs and related sustainability performance targets, both pre- and post-transaction, is strongly recommended to maintain the credibility of the instrument. According to ICMA, post-issuance verification is a necessary element of the SLBP. Furthermore, due to the unique technical nature of selecting and quantifying methane and flaring abatement KPIs, industry- and issue-specific expertise is strongly recommended for each stage of external review. Note that external consultants offering advice on methane abatement and quantification should not also serve as an independent third-party reviewer for the same client due to risks of conflict of interest.



The following details the potential role of external reviewers at each stage of the KPI-linked transaction, as well as recommended criteria for reviewers to credibly verify and assure methane abatement progress. [Table 5](#) offers guidance on specific skill sets necessary to support the various external reviewer roles outlined below.

5.1 Role of External Consultation for KPI and SPT Selection

Capital seekers, particularly those with limited technical expertise on methane and flaring abatement, are encouraged to engage subject matter experts to develop their KPI and SPT strategies. This process should include a detailed analysis of the current emissions inventory and an assessment of the resources (capital or personnel) required to execute abatement activities, perform quantification campaigns, and procure the necessary equipment or infrastructure to meet the planned timelines. [Table 5](#) below outlines the criteria that capital seekers may look for when selecting an external consultant. Many of the same skill sets overlap with those of SPO providers or auditors for pre-transaction and post-transaction review.

Verification of capital seekers' KPIs and related sustainability performance targets, both pre- and post-transaction, is strongly recommended. According to ICMA, post-issuance verification is a necessary element of the SLBP.

5.2 Role of Pre-Transaction Second Party Opinion Providers

The Guidance strongly re-emphasizes the ICMA recommendation that investors use SPO providers with subject-matter expertise to review and judge the feasibility, ambition, and alignment of the capital seekers’ KPI and SPT selection with that of the Guidance and the SLBP. Designing robust and ambitious methane and flaring abatement programs is nuanced and technical. A qualified SPO provider can help build credibility with external stakeholders that capital seekers are setting an appropriate level of ambition.

The Guidance recommends that pre-transaction review by SPO providers should verify:

- The capital seeker’s choice of Core and Secondary KPIs and associated SPTs is aligned with the Guidance’s guiding principles, as outlined in [Section 2](#).
- The capital seeker has chosen ambitious targets and timelines for each KPI and SPT, referencing local regulatory requirements, voluntary commitments, and industry benchmarks in line with tables 1, 2, 3, and 4.
- The capital seeker has demonstrated sufficient knowledge of their methane emissions inventory and/or has a strategy to address specific major source categories (including super-emitter detections). If not, the capital seeker has a plan to engage technical expertise, coupled with the selection of appropriate Secondary KPIs and SPTs.
- The capital seeker’s targets are aligned with publicly disclosed targets and sustainability goals, and if not, the capital seeker has a plan to update those goals with detailed targets and plans for achievement concurrent with the transaction.
- The capital seeker has provided sufficient evidence and documentation to support the proposal’s methane abatement targets and timelines, likelihood to succeed based on financial and resource availability, and mitigation of material risks.

[Table 5](#) below outlines criteria that capital seekers may look for when selecting an SPO provider.



5.3 Role of Post-Transaction Reviewers

In alignment with ICMA’s SLBP, progress and reporting of capital seekers’ methane reduction achievements at each SPT should be audited on an annual basis to the level of reasonable assurance.¹⁵⁴ Auditors will also be responsible for making recommendations to investors on any alignment with, or breaking of, specific covenants resulting in coupon triggers, interest rate step-ups, or other penalties. **Post-transaction auditors should consider verifying the following methane and flaring-specific points in the evaluation of KPIs and SPTs:**

- The completeness of the assurance report is aligned with guidance in [Section 4](#).
- The correct use of quantitative methodologies, aligned with the specific SPT (i.e., generic emission factors, source- and site-level measurement, use of reconciliation, use of primary metering) to report their methane intensity, total emissions, or flaring intensity claims.
- All necessary documentation backing up activity data (as they apply to Secondary KPIs), measurement campaign results, and quantitative capabilities of measurement technologies (e.g., fit for purpose, validated).
- Verification that the capital seeker has collected and responded to all large methane emission events (super-emitters) through review of detection records, record-keeping of follow-up activities, root-cause analysis reports, and repair or prevention activities.
- Verification that the capital seeker’s selected super-emitter and LDAR monitoring methods meet detection capabilities and frequency outlined in the SPTs, through review of the testing of the monitoring methods by third-party organizations.
- The implementation of flaring reduction strategies and technologies to support claims of flaring reduction targets.
- All primary documentation supporting infrastructure development, metered sales, or reinjection activities to support flaring reduction claims.
- All publicly available third-party data sources evaluating methane emissions or flaring rates over the capital seekers’ operating assets to identify deviations in reporting.
- The capital seeker has performed abatement activities aligned with Secondary KPI targets and SPTs.
- The capital seeker has used the best available data (detailed activity data, engineering calculations, and Supervisory Control and Data Acquisition (SCADA) records for emission events) to support specific reduction claims for each Secondary KPI.
- The competency and reliability of the data and documentation generated for each SPT through in-person data checks, review of infrastructure or equipment replacements, observation of measurement campaigns or LDAR campaigns, execution of standard operating procedures, and interviews with responsible personnel.
- If updates to previous SPT reports or emissions quantifications are accurate and transparently disclosed.
- Capital seeker efforts to quantify and/or mitigate potential direct or indirect impacts on other GHGs outside of the boundary of the KPIs (e.g., on other upstream or downstream segments of the supply chain).¹⁵⁵

[Table 5](#) below outlines the criteria that capital seekers may look for when selecting an auditor.

¹⁵⁴ Reasonable Assurance means sufficient evidence is gathered as part of a systematic review that identifies key risks and involves tests of controls, data verification, and evaluation of underlying assumptions and methods. It includes site visits to test data management processes and equipment.

¹⁵⁵ For example, this may include assessing downstream assets, such as a gas processing facility downstream of a producer, to ensure they have sufficient capacity to manage enhanced throughput from additional captured gas without disruption, including during upsets.

Table 5: Selection Criteria for External Reviewers

| | KPI and SPT Selection | Pre-Transaction SPO | Post-Transaction Verification of SPTs |
|---|-----------------------|---------------------|---------------------------------------|
| Methane Quantification and Reductions | | | |
| Demonstrated familiarity with methane abatement and intensity benchmarks | X | X | |
| Demonstrated familiarity with methane emissions inventories such as under International Organization for Standardization (ISO) 14064-1 ¹⁵⁶ , ISO 14064-3 ¹⁵⁷ , and ISO 14065 ¹⁵⁸ | X | X | X |
| Demonstrated experience with developing generic emission factor inventories, such as for regulatory or voluntary initiatives including EU ETS, CDM, CDP and others. | X | X | X |
| Demonstrated experience with source-level and site-level emission quantification approaches (i.e., OGMP L5, GTI Veritas, MiQ, QMRV ¹⁵⁹) including developing and coordinating research projects, implementing quantification programs, analyzing quantification data, verifying quantification capabilities of advanced solutions, and performing reconciliation of inventories | X | X | X |
| Demonstrated experience with developing marginal abatement cost curves, methane abatement strategies and implementation plans | X | | |
| Demonstrated experience collecting and/or interpreting advanced monitoring data for super-emitter detection | X | X | X |
| Experience developing corporate best practices, including record-keeping programs, follow-up and repair programs | X | | |
| Demonstrated experience with implementing procedures to minimize emissions from critical methane emission sources as well as operator training to procedures, including well completions, workovers, VRU design, tank battery design, blowdowns, liquid unloadings, and flare controls | X | X | X |
| Demonstrated experience with analysis of LDAR program performance and improvement, including the use of advanced technologies such as continuous monitoring systems or intermittent plane/drone-based surveys | X | X | X |

¹⁵⁶ International Organization for Standardization, ISO 14064-1:2018, *Greenhouse gases — Part 1*

¹⁵⁷ International Organization for Standardization, ISO 14064-3:2019, *Greenhouse gases — Part 3*.

¹⁵⁸ International Organization for Standardization, ISO 14065:2020, *Greenhouse gases — General principles and requirements*.

¹⁵⁹ Methane Emissions Technology Evaluation Center (METEC), *Quantifying Methane Emissions from the Natural Gas Value Chain* (Fort Collins: Colorado State University, 2025), <https://metec.colostate.edu/qmriv/>.

TABLE CONTINUES >

| | KPI and SPT Selection | Pre-Transaction SPO | Post-Transaction Verification of SPTs |
|---|-----------------------|---------------------|---------------------------------------|
| Flaring | | | |
| Demonstrated familiarity with flaring intensity benchmarks | X | X | |
| Demonstrated experience quantifying flaring volumes, metering, top-down satellite review | X | X | X |
| Demonstrated experience evaluating and implementing flare reduction strategies | X | | |
| Geography | | | |
| Ability to conduct desktop review of documents (methane inventories, standard operating procedures) | X | X | X |
| Ability to comprehend internal documents in the appropriate language of the various corporate assets | X | X | X |
| Demonstrated experience in conducting field assessments, developing sample plans, and conducting interviews | | | X |
| Auditing Services | | | |
| Conflict of Interest statement | | X | X |
| Professional auditing services experience and accreditation, such as under ISO 14065 | | | X |
| Adherence to an audit protocol designed for KPI-linked structures | | | X |

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